

CURRENT INDUSTRIAL REPORTS

Industrial Gases

January 1976



Issued March 1976

SERIES: M28C(76)-1

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey and the seasonal adjustment program appears on pages 4 and 5.

TABLE 1A.--SEASONALLY ADJUSTED SUMMARY OF PRODUCTION OF PRINCIPAL GASES: 1974 TO 1976

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide (2813311) and (2813331) (Short tons)	Hydrogen, high and low purity (100%) (Mil. cu. ft.)	Nitrogen, high and low purity (100%) (Mil. cu. ft.)	Oxygen, high and low purity (100%) (Mil. cu. ft.)
1976					
January.....	602	117,002	5,944	20,581	29,246
1975					
December.....	617	124,403	6,268	21,746	27,895
November.....	565	109,204	5,563	20,447	28,704
October.....	515	118,356	5,873	20,075	28,118
September.....	581	111,704	6,065	20,450	30,905
August.....	607	123,080	6,013	19,812	28,760
July.....	580	123,595	5,420	19,356	27,525
June.....	544	118,062	5,298	19,029	27,098
May.....	546	112,404	5,422	18,878	27,781
April.....	515	113,123	4,782	19,438	29,071
March.....	448	111,118	4,727	18,567	30,405
February.....	492	107,556	4,623	19,317	32,849
January.....	468	106,966	4,956	19,551	31,652
1974					
December.....	587	129,037	5,577	20,037	31,456
November.....	606	110,799	6,208	19,298	32,785
October.....	620	120,139	6,625	20,276	33,260
September.....	615	122,504	6,127	20,676	33,511
August.....	604	119,407	6,152	20,003	32,653
July.....	592	115,699	6,104	19,603	32,490
June.....	633	123,318	6,106	19,867	31,881
May.....	645	128,105	5,864	19,602	31,898
April.....	657	127,465	5,894	19,421	32,139
March.....	661	124,070	5,800	19,423	31,952
February.....	649	115,687	5,984	19,152	31,999
January.....	603	122,150	5,691	19,766	32,427

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233.



U.S. DEPARTMENT OF COMMERCE Bureau of the Census

For sale by the Subscriber Services Section (Publications), Bureau of the Census, Washington, D.C. 20233 or any Department of Commerce district office. Price: 15 cents per copy, \$1.50 per year.

TABLE 1B.--SUMMARY OF PRODUCTION OF PRINCIPAL GASES: 1974 TO 1976

(Not seasonally adjusted)

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons)	Carbon dioxide, solid (2813331) (Short tons)	Hydrogen, high and low purity (100%) (Mil. cu. ft.)	Nitrogen, high and low purity (100%) (Mil. cu. ft.)	Oxygen, high and low purity (100%) (Mil. cu. ft.)
1976						
January.....	621	88,757	19,763	5,947	20,828	29,656
1975 ¹						
December.....	635	85,804	22,723	6,344	21,551	28,341
November.....	590	83,572	18,956	5,386	19,958	28,390
October.....	552	104,191	24,893	6,137	20,436	29,018
September.....	588	101,935	25,428	5,967	20,245	29,854
August.....	592	109,353	28,719	5,857	19,971	27,558
July.....	567	102,731	30,017	5,485	19,453	26,895
June.....	539	99,549	27,306	5,214	18,688	27,014
May.....	537	90,671	24,698	5,541	19,350	29,067
April.....	501	87,855	21,667	4,772	19,165	29,595
March.....	422	84,990	21,277	4,859	19,364	32,199
February.....	477	77,998	17,399	4,416	18,282	30,763
January.....	483	77,932	21,279	4,981	19,785	32,095
1974 ¹						
December.....	604	90,767	21,802	5,644	19,857	31,958
November.....	637	86,509	19,838	6,059	18,949	32,359
October.....	667	95,555	30,154	6,578	20,702	34,085
September.....	613	101,868	28,649	5,980	20,305	32,595
August.....	594	98,400	32,742	5,981	20,183	31,632
July.....	571	94,503	32,771	6,233	19,819	31,810
June.....	615	99,803	29,014	5,960	19,550	31,467
May.....	646	107,657	27,420	6,004	20,071	33,142
April.....	638	98,961	24,445	5,882	19,148	32,718
March.....	628	99,420	22,020	5,956	20,238	33,382
February.....	631	83,124	19,484	5,699	18,126	30,062
January.....	626	87,021	22,309	5,719	20,043	32,684

Note: Beginning in January of 1975, the data are adjusted for report period variation. Comparable data are not available for previous years; however, the effect of this adjustment is considered to be negligible at the total level. See "Reporting Period Adjustment" in the text.

¹See text--Relationship Between M-28C and M-28C-14 Series for Industrial Gases.

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

PRODUCT CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	JANUARY 1976 QUANTITY PRODUCED	DECEMBER 1975 QUANTITY PRODUCED	JANUARY 1975 QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	621	635	483
	PRODUCED FOR PIPELINE SHIPMENT (EXCLUDING THAT SHIPPED TO BE COMPRESSED)	DO	272	256	189
	PRODUCED FOR COMPRESSION, INCLUDING CYLINDER AND PIPELINE	DO	349	379	138
	PRODUCED FOR CONSUMPTION IN THIS PLANT.	DO			156
2813415	ARGON, HIGH PURITY	DO	355	340	363
	PRODUCED FOR CYCLINDER AND BULK DELIVERY SHIPMENT	DO	355	340	363
	PRODUCED FOR PIPELINE SHIPMENT.	DO			
	PRODUCED FOR CONSUMPTION IN THIS PLANT.	DO			
2813311	CARBON DIOXIDE: LIQUID AND GAS (2)	S.TONS	88,757	85,804	77,932
2813331	SOLID (DRY ICE)	DO	19,763	22,723	21,279
2813420	HYDROGEN, TOTAL (3)	MIL.CU.FT	5,947	6,344	4,981
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	750	698	586
	LIQUID PRODUCED FOR CONVERSION TO GAS	DO			
	PRODUCED FOR PIPELINE SHIPMENT.	DO	938	1,148	1,080
	LIQUID PRODUCED FOR GOVERNMENT USE.	DO			
	PRODUCED FOR CONSUMPTION IN THIS PLANT.	DO	4,259	4,498	3,315
2813440	NITROGEN, TOTAL (4)	DO	20,828	21,551	19,785
	GAS: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	12,637	12,931	11,801
	PRODUCED FOR PIPELINE SHIPMENT	DO			
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO	1,811	1,903	1,698
	LIQUID: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	5,141	5,605	5,302
	PRODUCED FOR BULK SHIPMENT TO PIPELINES OR TO OTHER AIR SEPARATION PLANTS.	DO	948	865	795
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO	291	247	189
2813450	OXYGEN, TOTAL	DO	29,656	28,341	32,095
	GAS: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	18	22	31
	PRODUCED FOR PIPELINE SHIPMENT	DO	20,712	19,625	23,788
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO	⁵ 4,548	⁵ 4,163	⁵ 3,479
	LIQUID: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	3,735	3,898	3,936
	PRODUCED FOR BULK SHIPMENT TO PIPELINES OR TO OTHER AIR SEPARATION PLANTS.	DO	643	633	861
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO	(⁵)	(⁵)	(⁵)

(NA) Not available.

¹Revised by 5 percent or more from previously published figures.¹Excludes quantities of acetylene produced and consumed by railroad shops, shipyards, and small establishments using portable generators.²Excludes production of liquid and gas CO₂ converted to and reported as dry ice and also amounts converted from pure CO₂ (liquid or solid) purchased or received from other plants. Also excludes quantities produced and consumed in plants manufacturing soda ash or urea.³Excludes quantities produced and consumed in the manufacture of methanol and ammonia, but includes an unspecified amount of hydrogen produced for slae or interplant transfer to plants consuming this gas in the production of ammonia. Also excludes amounts of hydrogen produced in petroleum refineries for captive use. However, of the total shown for lower purity hydrogen prior to 1969, 70 to 75 percent was accounted for by petroleum refineries with captive hydrogen production. Not all such petroleum refineries were canvassed in this survey.⁴Excludes amounts produced and used in the manufacture of ammonia and ammonia derivatives.⁵Data for oxygen (liquid), produced for consumption in this plant, combined with data for oxygen (gas) produced for consumption in this plant to avoid disclosure.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census monthly Form M28A.2, "Industrial Gases - Production," and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such missing figures are imputed from the month-to-month movements shown by reporting firms and are generally limited to a maximum of 25 percent to any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to non-response, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, corrections. Figures which were revised significantly are indicated by footnotes.

REPORTING PERIOD ADJUSTMENT

Beginning January 1975 the data were adjusted for number of working days in the reporting period to compensate for differences in individual company reporting patterns (i.e., calendar month, 4-week, 5-week periods). It has been determined that the calendar month accounting system prevails in the industry. Hence, adjustments have been made to those reporting on other than a calendar month basis.

TRADING-DAY FACTORS

Variation in the rate of activity that arises from the existence of different numbers of trading days in the same month for different years can be an important cause of month-to-month irregular fluctuations. Unlike some other causes of irregular fluctuations such as unexpected economic developments, unusual weather, and statistical errors, trading-day irregularities can be approximately identified and removed so that the underlying trend-cycle stands out more clearly. Hence,

it is often possible to reduce the irregular factor by a trading-day adjustment.

SEASONAL ADJUSTMENT

This report presents seasonally adjusted data for a number of the most important series published monthly in Current Industrial Reports M28A.2, "Industrial Gases." The seasonal adjustment program largely eliminates the effect of normal seasonal variation (including variations due to vacations, weather, etc.) as measured over the time period for which data were used. The resulting information thus provides a better measure than the original data of the month-to-month variations which are due to factors that are not associated with a repetitive seasonal pattern.

RELATED REPORTS

Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Products, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement.

RELATIONSHIP BETWEEN M28C AND M28C-14 SERIES FOR INDUSTRIAL GASES

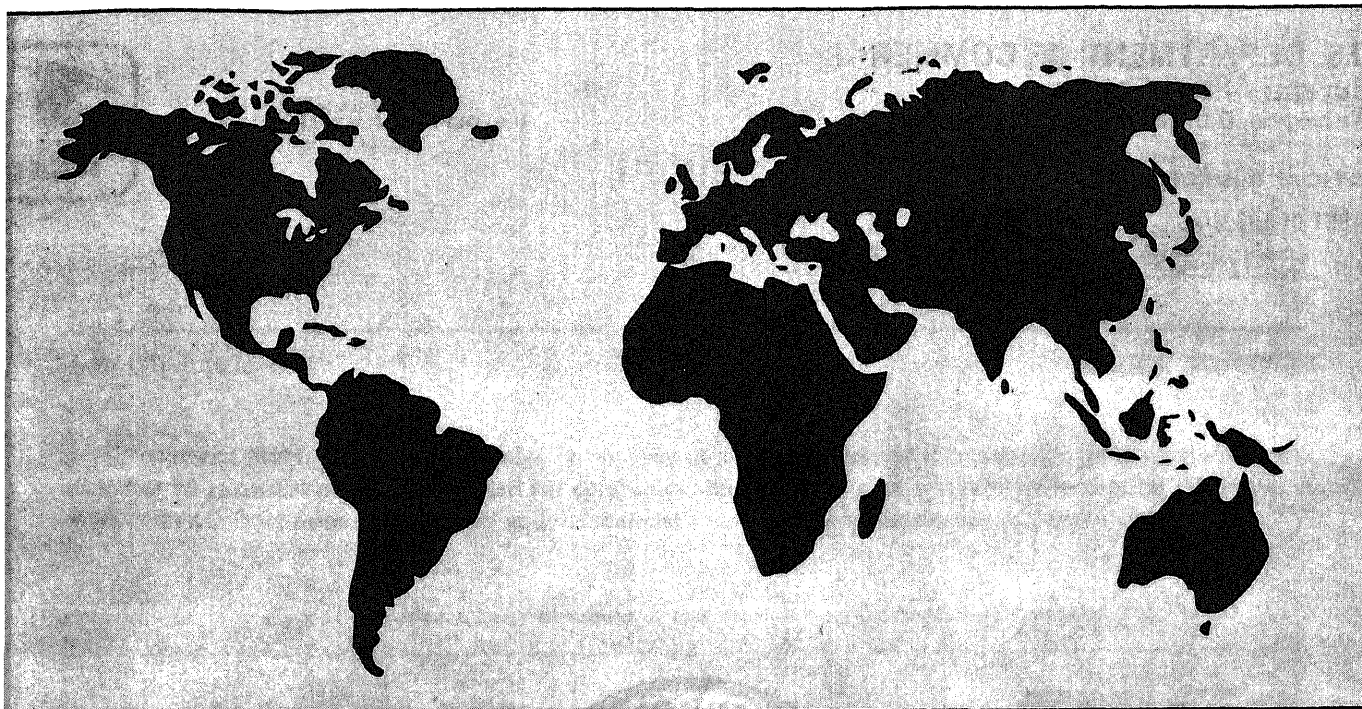
The data as shown in Table 1 reflect levels of production as reported by establishments on monthly from M28A.2. These data are revised in the annual publication collected on form MA-28E.2 and are shown in Table 9 of the annual report M28C-14. The actual data reported by establishments canvassed on the annual differ by varying amounts from those collected monthly due to receipt of revised data from the respondent and establishments reporting on the annual and not on the monthly. For these reasons, the monthly and annual data comprise two separate series and should be used as such for analytical purposes. Specifically, the monthly data should be useful in describing month-to-month changes while the annual

data provide a better indication of the level of production. Revisions to the 1975 monthly series based on findings from the 1974 annual will be forthcoming as soon as research into the differences are resolved.

EXPLANATION OF TERMS

Production—Data shown for production represent total quantity of each chemical produced, including

quantity consumed in plants, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.



WORLD DEMOGRAPHIC MAPS

These three maps provide specific data on the fertility, population growth, and mortality patterns of the world. They were developed by the International Statistical Programs Center of the Census Bureau for the Office of Population, Agency for International Development. Each map measures 10½ x 16 inches and is printed in color.

World Fertility Pattern, 1972. (ISP-WCF-72) Births per 1,000 population are indicated for each country. Four separate tones of red and yellow show levels of fertility.

World Population Growth Patterns, 1972. (ISP-WCG-72) Annual rate of population growth is shown by percent for the countries of the world. Four separate tones of blue and yellow show levels of growth.

World Mortality Pattern, 1972. (ISP-WCM-72) Deaths per 1,000 population are indicated for each country. Three separate tones of brown and yellow show levels of mortality.

Each map is priced at 25 cents.

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Industrial Gases

February 1976



Issued April 1976

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TABLE 1A.--SEASONALLY ADJUSTED SUMMARY OF PRODUCTION OF PRINCIPAL GASES: 1974 TO 1976

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide (2813311) and (2813331) (Short tons)	Hydrogen, high and low purity (100%) (Mil. cu. ft.)	Nitrogen, high and low purity (100%) (Mil. cu. ft.)	Oxygen, high and low purity (100%) (Mil. cu. ft.)
1976					
February.....	609	128,249	5,890	21,210	32,254
January.....	600	127,940	6,428	22,887	30,444
1975					
December.....	617	124,403	6,268	21,746	27,895
November.....	565	109,204	5,563	20,447	28,704
October.....	515	118,356	5,873	20,075	28,118
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TABLE 1B.--SUMMARY OF PRODUCTION OF PRINCIPAL GASES: 1974 TO 1976

(Not seasonally adjusted)

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons) ¹	Carbon dioxide, solid (2813331) (Short tons) ¹	Hydrogen, high and low purity (100%) (Mil. cu. ft.) ¹	Nitrogen, high and low purity (100%) (Mil. cu. ft.) ¹	Oxygen, high and low purity (100%) (Mil. cu. ft.)
1976						
February.....	629	119,750	24,846	6,166	22,411	34,441
January.....	582	114,474	23,467	6,397	22,445	30,024
1975 ²						
December.....	635	85,804	22,723	6,344	21,551	28,341
November.....	590	83,572	18,956	5,386	19,958	28,390
October.....	552	104,191	24,893	6,137	20,436	29,018
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October.....	667	95,555	30,154	6,578	20,702	34,085
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Note: Beginning in January of 1975, the data are adjusted for report period variation. Comparable data are not available for previous years; however, the effect of this adjustment is considered to be negligible at the total level. See "Reporting Period Adjustment" in the text.

¹See footnote 6, table 2.

²See text--Relationship Between M-28C and M-28C-14 Series for Industrial Gases.

Table 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

Product code	Chemical and basis	Unit of measure	February 1976 Quantity produced	January 1976 Quantity produced
2813200	Acetylene ¹	Mil. cu. ft.....	629	582
	Produced for pipeline shipment (excluding that shipped to be compressed).....	....do.....	285	^r 232
	Produced for compression, including cylinder and pipeline.....	....do.....	344	350
	Produced for consumption in this plant.....	....do.....		
2813415	Argon, high purity.....	....do.....	422	365
	Produced for cylinder and bulk delivery shipment.....	....do.....	422	365
	Produced for pipeline shipment.....	....do.....		
	Produced for consumption in this plant.....	....do.....		
	Carbon dioxide:			
2813311	Liquid and gas ²	Short ton.....	119,750	^{6r} 114,474
2813331	Solid (dry ice).....	....do.....	24,846	^{6r} 23,467
2813429	Hydrogen, total ³	Mil. cu. ft.....	6,166	6,397
	Produced for cylinder and bulk delivery shipment.....	....do.....	587	757
	Liquid produced for conversion to gas.....	....do.....		
	Produced for pipeline shipment.....	....do.....	1,573	^{6r} 1,393
	Liquid produced for government use.....	....do.....		
	Produced for consumption in this plant.....	....do.....	4,006	4,247
2813440	Nitrogen, total ⁴.....	....do.....	22,411	22,445
	Gas:			
	Produced for cylinder and bulk delivery shipment.....	....do.....	13,411	^{6r} 13,663
	Produced for pipeline shipment.....	....do.....		
	Produced for consumption in this plant.....	....do.....		
	Liquid:			
	Produced for cylinder and bulk delivery shipment.....	....do.....	6,217	^{6r} 5,719
	Produced for bulk shipment to pipelines or to other air separation plants.....	....do.....	825	954
	Produced for consumption in this plant.....	....do.....	283	293
2813450	Oxygen, total.....	....do.....	34,441	30,024
	Gas:			
	Produced for cylinder and bulk delivery shipment.....	....do.....	17	18
	Produced for pipeline shipment.....	....do.....	21,618	20,528
	Produced for consumption in this plant.....	....do.....	⁵ 4,670	⁵ 4,665
	Liquid:			
	Produced for cylinder and bulk delivery shipment.....	....do.....	4,883	^{6r} 4,158
	Produced for bulk shipment to pipelines or to other air separation plants.....do.....	598	655
	Produced for consumption in this plant.....do.....	(⁵)	(⁵)

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DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census monthly Form M28A.2, "Industrial Gases - Production," and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

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it is often possible to reduce the irregular factor by a trading-day adjustment.

SEASONAL ADJUSTMENT

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RELATED REPORTS

Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Products, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

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RELATIONSHIP BETWEEN M28C AND M28C-14 SERIES FOR INDUSTRIAL GASES

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data provide a better indication of the level of production. Revisions to the 1975 monthly series based on findings from the 1974 annual will be forthcoming as soon as research into the differences are resolved.

EXPLANATION OF TERMS

Production—Data shown for production represent total quantity of each chemical produced, including

quantity consumed in plants, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.



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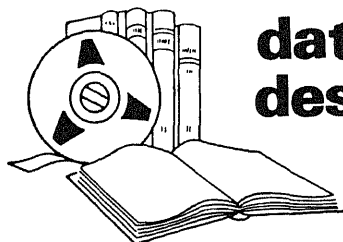
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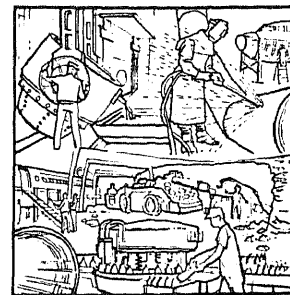
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CURRENT INDUSTRIAL REPORTS

Industrial Gases

March 1976



Issued May 1976

SERIES: M28C(76)-3

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey and the seasonal adjustment program appears on pages 4 and 5.

TABLE 1A.--SEASONALLY ADJUSTED SUMMARY OF PRODUCTION OF PRINCIPAL GASES: 1974 TO 1976

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide (2813311) and (2813331) (Short tons)	Hydrogen, high and low purity (100%) (Mil. cu. ft.)	Nitrogen, high and low purity (100%) (Mil. cu. ft.)	Oxygen, high and low purity (100%) (Mil. cu. ft.)
1976					
March.....	638	149,162	7,544	24,741	35,279
February.....	606	129,014	5,890	21,245	30,068
January.....	600	127,940	6,428	22,887	30,444
1975					
December.....	617	124,403	6,268	21,746	27,895
November.....	565	109,204	5,563	20,447	28,704
October.....	515	118,356	5,873	20,075	28,118
September.....	581	111,704	6,065	20,450	30,905
August.....	607	123,080	6,013	19,812	28,760
July.....	580	123,595	5,420	19,356	27,525
June.....	544	118,062	5,298	19,029	27,098
May.....	546	112,404	5,422	18,878	27,781
April.....	515	113,123	4,782	19,438	29,071
March.....	448	111,118	4,727	18,567	30,405
February.....	492	107,556	4,623	19,317	32,849
January.....	468	106,966	4,956	19,551	31,652
1974					
December.....	587	129,037	5,577	20,037	31,456
November.....	606	110,799	6,208	19,298	32,785
October.....	620	120,139	6,625	20,276	33,260
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July.....	592	115,699	6,104	19,603	32,490
June.....	633	123,318	6,106	19,867	31,881
May.....	645	128,105	5,864	19,602	31,898
April.....	657	127,465	5,894	19,421	32,139
March.....	661	124,070	5,800	19,423	31,952

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233.



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TABLE 1B.--SUMMARY OF PRODUCTION OF PRINCIPAL GASES: 1974 TO 1976

(Not seasonally adjusted)

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons) ¹	Carbon dioxide, solid (2813331) (Short tons) ¹	Hydrogen, high and low purity (100%) (Mil. cu. ft.) ¹	Nitrogen, high and low purity (100%) (Mil. cu. ft.) ¹	Oxygen, high and low purity (100%) (Mil. cu. ft.)
1976						
March.....	601	129,576	26,536	7,340	23,722	33,330
February.....	588	120,316	25,142	6,165	22,448	32,107
January.....	582	114,474	23,467	6,397	22,445	30,024
1975 ²						
December.....	635	85,804	22,723	6,344	21,551	28,341
November.....	590	83,572	18,956	5,386	19,958	28,390
October.....	552	104,191	24,893	6,137	20,436	29,018
September.....	588	101,935	25,428	5,967	20,245	29,854
August.....	592	109,353	28,719	5,857	19,971	27,558
July.....	567	102,731	30,017	5,485	19,453	26,895
June.....	539	99,549	27,306	5,214	18,688	27,014
May.....	537	90,671	24,698	5,541	19,350	29,067
April.....	501	87,855	21,667	4,772	19,165	29,595
March.....	422	84,990	21,277	4,859	19,364	32,199
February.....	477	77,998	17,399	4,416	18,282	30,763
January.....	483	77,932	21,279	4,981	19,785	32,095
1974 ²						
December.....	604	90,767	21,802	5,644	19,857	31,958
November.....	637	86,509	19,838	6,059	18,949	32,359
October.....	667	95,555	30,154	6,578	20,702	34,085
September.....	613	101,868	28,649	5,980	20,305	32,595
August.....	594	98,400	32,742	5,981	20,183	31,632
July.....	571	94,503	32,771	6,233	19,819	31,810
June.....	615	99,803	29,014	5,960	19,550	31,467
May.....	646	107,657	27,420	6,004	20,071	33,142
April.....	638	98,961	24,445	5,882	19,148	32,718
March.....	628	99,420	22,020	5,956	20,238	33,382
February.....	631	83,124	19,484	5,699	18,126	30,062

Note: Beginning in January of 1975, the data are adjusted for report period variation. Comparable data are not available for previous years; however, the effect of this adjustment is considered to be negligible at the total level. See "Reporting Period Adjustment" in the text.

¹See footnote 6, table 2.

²See text--Relationship Between M-28C and M-28C-14 Series for Industrial Gases.

Table 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

Product code	Chemical and basis	Unit of measure	March 1976 Quantity produced	February 1976 Quantity produced
2813200	Acetylene ¹	Mil. cu. ft.....	601	588
	Produced for pipeline shipment (excluding that shipped to be compressed).....	....do.....	245	^r 245
	Produced for compression, including cylinder and pipeline.....	....do.....	356	343
	Produced for consumption in this plant.....	....do.....		
2813415	Argon, high purity.....	....do.....	521	454
	Produced for cylinder and bulk delivery shipment.....	....do.....	521	454
	Produced for pipeline shipment.....	....do.....		
	Produced for consumption in this plant.....	....do.....		
2813311	Carbon dioxide:			
	Liquid and gas ²	Short ton.....	129,576	120,316
2813331	Solid (dry ice).....	....do.....	26,536	25,142
2813420	Hydrogen, total ³	Mil. cu. ft.....	7,340	6,165
	Produced for cylinder and bulk delivery shipment.....	....do.....	757	583
	Liquid produced for conversion to gas.....	....do.....		
	Produced for pipeline shipment.....	....do.....	1,850	1,573
	Liquid produced for government use.....	....do.....		
	Produced for consumption in this plant.....	....do.....	4,733	4,009
2813440	Nitrogen, total ⁴.....	....do.....	23,722	22,448
	Gas:			
	Produced for cylinder and bulk delivery shipment.....	....do.....	14,483	13,401
	Produced for pipeline shipment.....	....do.....		
	Produced for consumption in this plant.....	....do.....	1,787	1,740
	Liquid:			
	Produced for cylinder and bulk delivery shipment.....	....do.....	6,393	6,337
	Produced for bulk shipment to pipelines or to other air separation plants.....	....do.....	1,059	^r 687
	Produced for consumption in this plant.....	....do.....		
2813450	Oxygen, total.....	....do.....	33,330	32,107
	Gas:			
	Produced for cylinder and bulk delivery shipment.....	....do.....	82	^r 60
	Produced for pipeline shipment.....	....do.....	23,335	21,734
	Produced for consumption in this plant.....	....do.....	⁵ 4,760	⁵ 4,851
	Liquid:			
	Produced for cylinder and bulk delivery shipment.....	....do.....	4,625	4,864
	Produced for bulk shipment to pipelines or to other air separation plants.....	....do.....	528	598
	Produced for consumption in this plant.....	....do.....		

(NA) Not available. ^rRevised by 5 percent or more from previously published figures.¹Excludes quantities of acetylene produced and consumed by railroad shops, shipyards, and small establishments using portable generators.²Excludes production of liquid and gas CO₂ converted to and reported as dry ice and also amounts converted from pure CO₂ (liquid or solid) purchased or received from other plants. Also excludes quantities produced and consumed in plants manufacturing soda ash or urea.³Excludes quantities produced and consumed in the manufacture of methanol and ammonia, but includes an unspecified amount of hydrogen produced for sale or interplant transfer to plants consuming this gas in the production of ammonia. Also excludes amounts of hydrogen produced in petroleum refineries for captive use. However, of the total shown for lower purity hydrogen prior to 1969, 70 to 75 percent was accounted for by petroleum refiners with captive hydrogen production. Not all such petroleum refineries were canvassed in this survey.⁴Excludes amounts produced and used in the manufacture of ammonia and ammonia derivatives.⁵Data for oxygen (liquid), produced for consumption in this plant, combined with data for oxygen (gas) produced for consumption in this plant to avoid disclosure.⁶A reconciliation of information filed on Census Annual Form MA-28E, 2, "Industrial Gases" and monthly Form M28A.2, "Production of Industrial Gases," indicates that a number of establishments have been omitted from data shown in the monthly series in 1975. The data for January 1976 have been revised to reflect these changes and additions whereas the monthly figures for 1975 are understated by approximately 20 percent for carbon dioxide and 10 percent for selected cells in hydrogen and nitrogen. The applicable monthly figures for 1975 will be corrected in the annual series to be issued sometime within the next several weeks.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census monthly Form M28A.2, "Industrial Gases - Production," and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such missing figures are imputed from the month-to-month movements shown by reporting firms and are generally limited to a maximum of 25 percent to any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to non-response, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, corrections. Figures which were revised significantly are indicated by footnotes.

REPORTING PERIOD ADJUSTMENT

Beginning January 1975 the data were adjusted for number of working days in the reporting period to compensate for differences in individual company reporting patterns (i.e., calendar month, 4-week, 5-week periods). It has been determined that the calendar month accounting system prevails in the industry. Hence, adjustments have been made to those reporting on other than a calendar month basis.

TRADING-DAY FACTORS

Variation in the rate of activity that arises from the existence of different numbers of trading days in the same month for different years can be an important cause of month-to-month irregular fluctuations. Unlike some other causes of irregular fluctuations such as unexpected economic developments, unusual weather, and statistical errors, trading-day irregularities can be approximately identified and removed so that the underlying trend-cycle stands out more clearly. Hence,

it is often possible to reduce the irregular factor by a trading-day adjustment.

SEASONAL ADJUSTMENT

This report presents seasonally adjusted data for a number of the most important series published monthly in Current Industrial Reports M28A.2, "Industrial Gases." The seasonal adjustment program largely eliminates the effect of normal seasonal variation (including variations due to vacations, weather, etc.) as measured over the time period for which data were used. The resulting information thus provides a better measure than the original data of the month-to-month variations which are due to factors that are not associated with a repetitive seasonal pattern.

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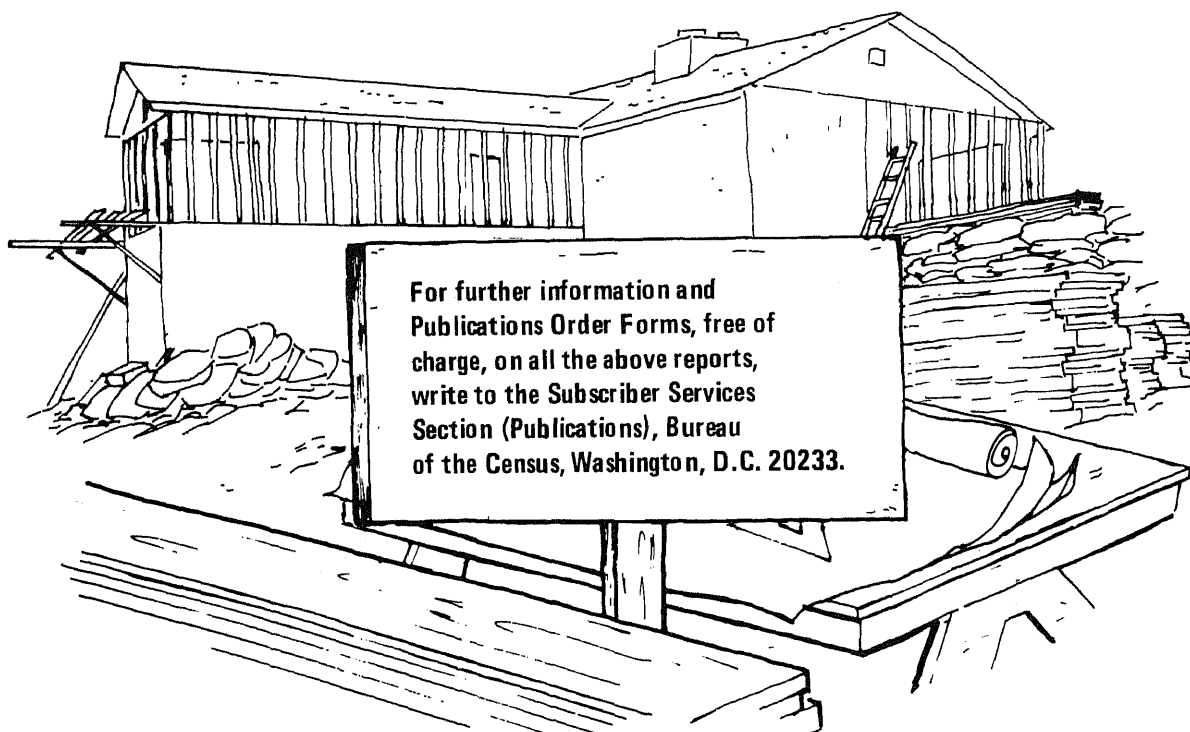
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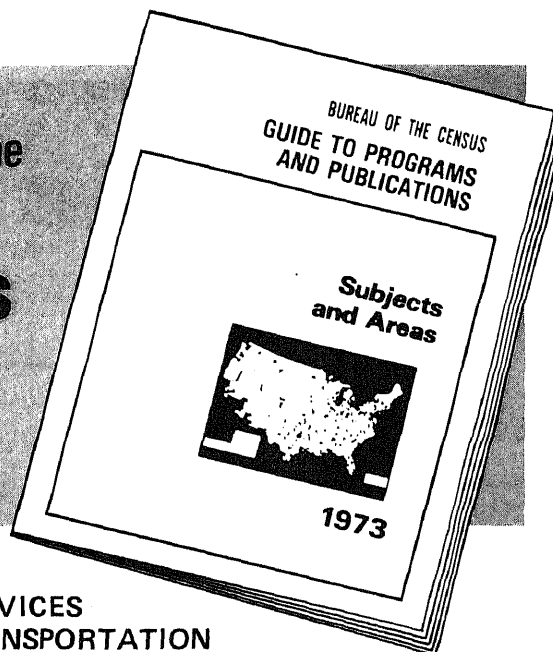
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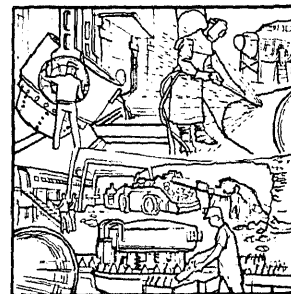
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Industrial Gases

April 1976



Issued July 1976

SERIES: M28C(76)-4

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TABLE 1A.--SUMMARY OF PRODUCTION OF PRINCIPAL GASES: 1974 TO 1976

(Seasonally adjusted)

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide (2813311) and (2813331) (Short tons)	Hydrogen, high and low purity (100%) (2813420) (Mil. cu. ft.)	Nitrogen, high and low purity (100%) (2813440) (Mil. cu. ft.)	Oxygen, high and low purity (100%) (2813450) (Mil. cu. ft.)
1976					
April.....	634	156,987	7,101	23,782	33,221
March.....	638	172,021	7,374	23,486	31,772
February.....	606	129,014	5,890	21,245	30,068
January.....	600	127,940	6,428	22,887	30,444
1975					
December.....	617	124,403	6,268	21,746	27,895
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June.....	539	99,549	27,306	5,214	18,688	27,014
May.....	537	90,671	24,698	5,541	19,350	29,067
April.....	501	87,855	21,667	4,772	19,165	29,595
March.....	422	84,990	21,277	4,859	19,364	32,199
February.....	477	77,998	17,399	4,416	18,282	30,763
January.....	483	77,932	21,279	4,981	19,785	32,095
1974 ²						
December.....	604	90,767	21,802	5,644	19,857	31,958
November.....	637	86,509	19,838	6,059	18,949	32,359
October.....	667	95,555	30,154	6,578	20,702	34,085
September.....	613	101,868	28,649	5,980	20,305	32,595
August.....	594	98,400	32,742	5,981	20,183	31,632
July.....	571	94,503	32,771	6,233	19,819	31,810
June.....	615	99,803	29,014	5,960	19,550	31,467
May.....	646	107,657	27,420	6,004	20,071	33,142
April.....	638	98,961	24,445	5,882	19,148	32,718

Note: Beginning in January of 1975, the data are adjusted for report period variation. Comparable data are not available for previous years; however, the effect of this adjustment is considered to be negligible at the total level. See "Reporting Period Adjustment" in the text.

¹See footnote 6, table 2.

²See text--Relationship Between M-28C and M-28C-14 Series for Industrial Gases.

Table 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

Product code	Chemical and basis	Unit of measure	April 1976 Quantity produced	March 1976 Quantity produced
2813200	Acetylene ¹	Mil. cu. ft.....	617	601
	Produced for pipeline shipment (excluding that shipped to be compressed).....	....do.....	278	245
	Produced for compression, including cylinder and pipeline.....	....do.....	339	356
	Produced for consumption in this plant.....	....do.....		
2813415	Argon, high purity.....	....do.....	398	^r 473
	Produced for cylinder and bulk delivery shipment.....	....do.....	398	473
	Produced for pipeline shipment.....	....do.....		
	Produced for consumption in this plant.....	....do.....		
2813311	Carbon dioxide:			
	Liquid and gas ²	Short ton.....	127,317	135,063
2813331	Solid (dry ice).....	....do.....	26,338	^r 29,300
2813420	Hydrogen, total ³	Mil. cu. ft.....	7,065	7,337
	Produced for cylinder and bulk delivery shipment.....	....do.....	640	760
	Liquid produced for conversion to gas.....	....do.....		
	Produced for pipeline shipment.....	....do.....	1,691	1,844
	Liquid produced for government use.....	....do.....	4,734	4,733
	Produced for consumption in this plant.....	....do.....		
2813440	Nitrogen, total ⁴.....	....do.....	23,471	24,496
	Gas:			
	Produced for cylinder and bulk delivery shipment.....	....do.....	14,265	14,886
	Produced for pipeline shipment.....	....do.....	1,797	1,782
	Produced for consumption in this plant.....	....do.....		
	Liquid			
	Produced for cylinder and bulk delivery shipment.....	....do.....	6,510	6,793
	Produced for bulk shipment to pipelines or to other air separation plants.....	....do.....	899	1,035
	Produced for consumption in this plant.....	....do.....		
2813450	Oxygen, total.....	....do.....	33,213	33,618
	Gas:			
	Produced for cylinder and bulk delivery shipment.....	....do.....	18	80
	Produced for pipeline shipment.....	....do.....	23,136	23,259
	Produced for consumption in this plant.....	....do.....	⁵ 4,978	⁵ 4,729
	Liquid:			
	Produced for cylinder and bulk delivery shipment.....	....do.....	4,599	5,059
	Produced for bulk shipment to pipelines or to other air separation plants.....	....do.....	482	^r 491
	Produced for consumption in this plant.....	....do.....	(⁵)	(⁵)

(NA) Not available. ^rRevised by 5 percent or more from previously published figures.¹Excludes quantities of acetylene produced and consumed by railroad shops, shipyards, and small establishments using portable generators.²Excludes production of liquid and gas CO₂ converted to and reported as dry ice and also amounts converted from pure CO₂ (liquid or solid) purchased or received from other plants. Also excludes quantities produced and consumed in plants manufacturing soda ash or urea.³Excludes quantities produced and consumed in the manufacture of methanol and ammonia, but includes an unspecified amount of hydrogen produced for sale or interplant transfer to plants consuming this gas in the production of ammonia. Also excludes amounts of hydrogen produced in petroleum refineries for captive use. However, of the total shown for lower purity hydrogen prior to 1969, 70 to 75 percent was accounted for by petroleum refiners with captive hydrogen production. Not all such petroleum refineries were canvassed in this survey.⁴Excludes amounts produced and used in the manufacture of ammonia and ammonia derivatives. ⁵Data for oxygen (liquid), produced for consumption in this plant, combined with data for oxygen (gas) produced for consumption in this plant to avoid disclosure.⁶A reconciliation of information filed on Census Annual Form MA-28E, 2, "Industrial Gases" and monthly Form M28A.2, "Production of Industrial Gases," indicates that a number of establishments have been omitted from data shown in the monthly series in 1975. The data for January 1976 have been revised to reflect these changes and additions; whereas, the monthly figures for 1975 are understated by approximately 20 percent for carbon dioxide and 10 percent for selected cells in hydrogen and nitrogen. The applicable monthly figures for 1975 will be corrected in the annual series to be issued sometime within the next several weeks.

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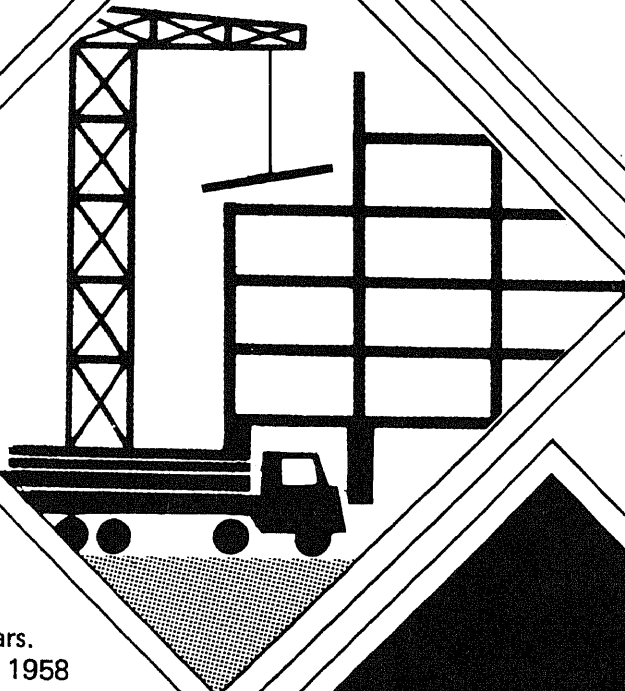
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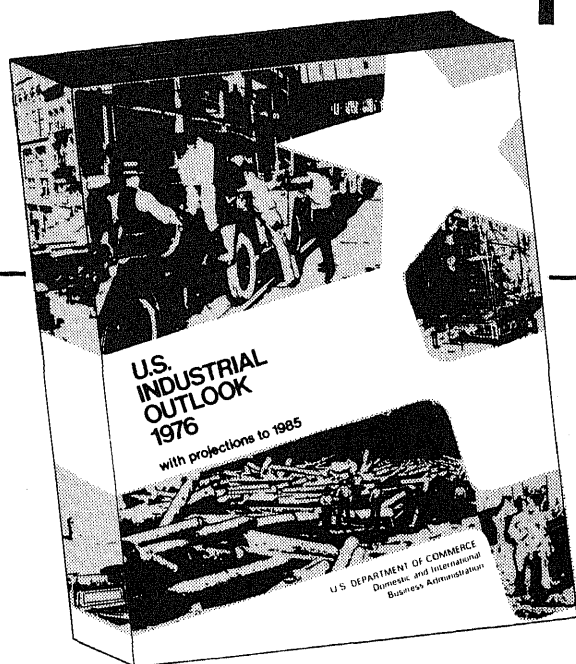


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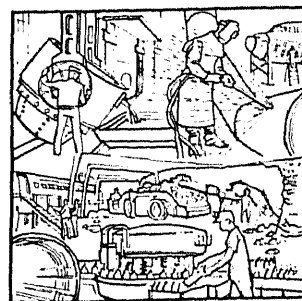
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Industrial Gases

May 1976



Issued July 1976

SERIES: M28C(76)-5

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey and the seasonal adjustment program appears on pages 4 and 5.

TABLE 1A.--SUMMARY OF PRODUCTION OF PRINCIPAL GASES: 1974 TO 1976

(Seasonally adjusted)

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide (2813311) and (2813331) (Short tons)	Hydrogen, high and low purity (100%) (2813420) (Mil. cu. ft.)	Nitrogen, high and low purity (100%) (2813440) (Mil. cu. ft.)	Oxygen, high and low purity (100%) (2813450) (Mil. cu. ft.)
1976					
May.....	613	156,163	6,393	23,100	33,160
April.....	634	156,987	7,099	23,504	32,375
March.....	638	172,021	7,374	23,486	31,772
February.....	606	129,014	5,890	21,245	30,068
January.....	600	127,940	6,428	22,887	30,444
1975					
December.....	617	124,403	6,268	21,746	27,895
November.....	565	109,204	5,563	20,447	28,704
October.....	515	118,356	5,873	20,075	28,118
September.....	581	111,704	6,065	20,450	30,905
August.....	607	123,080	6,013	19,812	28,760
July.....	580	123,595	5,420	19,356	27,525
June.....	544	118,062	5,298	19,029	27,098
May.....	546	112,404	5,422	18,878	27,781
April.....	515	113,123	4,782	19,438	29,071
March.....	448	111,118	4,727	18,567	30,405
February.....	492	107,556	4,623	19,317	32,849
January.....	468	106,966	4,956	19,551	31,652
1974					
December.....	587	129,037	5,577	20,037	31,456
November.....	606	110,799	6,208	19,298	32,785
October.....	620	120,139	6,625	20,276	33,260
September.....	615	122,504	6,127	20,676	33,511
August.....	604	119,407	6,152	20,003	32,653
July.....	592	115,699	6,104	19,603	32,490
June.....	633	123,318	6,106	19,867	31,881
May.....	645	128,105	5,864	19,602	31,898
April.....	657	127,465	5,894	19,421	32,139

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233.



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TABLE 1B.--SUMMARY OF PRODUCTION OF PRINCIPAL GASES: 1974 TO 1976

(Not seasonally adjusted)

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons) ¹	Carbon, dioxide, solid (2813331) (Short tons) ¹	Hydrogen, high and low purity (100%) (Mil. cu. ft.) ¹	Nitrogen, high and low purity (100%) (Mil. cu. ft.) ¹	Oxygen, high and low purity (100%) (Mil. cu. ft.) ¹
1976						
May.....	607	131,520	28,762	6,533	23,677	34,695
April.....	617	127,317	26,338	7,064	23,197	32,367
March.....	601	135,063	29,300	7,337	24,496	33,618
February.....	588	120,316	25,142	6,165	22,448	32,107
January.....	582	114,474	23,467	6,397	22,445	30,024
1975 ²						
December.....	635	85,804	22,723	6,344	21,551	28,341
November.....	590	83,572	18,956	5,386	19,958	28,390
October.....	552	104,191	24,893	6,137	20,436	29,018
September.....	588	101,935	25,428	5,967	20,245	29,854
August.....	592	109,353	28,719	5,857	19,971	27,558
July.....	567	102,731	30,017	5,485	19,453	26,895
June.....	539	99,549	27,306	5,214	18,688	27,014
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¹See note, table 2.

²See text--Relationship Between M-28C and M-28C-14 Series for Industrial Gases.

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

PRODUCT CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	MAY 1976 QUANTITY PRODUCED	APRIL 1976 QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	607	617
	PRODUCED FOR PIPELINE SHIPMENT (EXCLUDING THAT SHIPPED TO BE COMPRESSED)	DO	261	278
	PRODUCED FOR COMPRESSION, INCLUDING CYLINDER AND PIPELINE	DO	346	339
	PRODUCED FOR CONSUMPTION IN THIS PLANT.	DO		
2813415	ARGON, HIGH PURITY	DO	440	396
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	440	396
	PRODUCED FOR PIPELINE SHIPMENT.	DO		
	PRODUCED FOR CONSUMPTION IN THIS PLANT.	DO		
2813311	CARBON DIOXIDE: LIQUID AND GAS (2)	S.TONS	131,520	127,317
2813331	SOLID (DRY ICE)	DO	28,762	26,338
2813420	HYDROGEN, TOTAL (3)	MIL.CU.FT	6,533	7,064
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	722	640
	LIQUID PRODUCED FOR CONVERSION TO GAS	DO		
	PRODUCED FOR PIPELINE SHIPMENT.	DO	1,815	1,691
	LIQUID PRODUCED FOR GOVERNMENT USE.	DO		
	PRODUCED FOR CONSUMPTION IN THIS PLANT.	DO	3,996	4,733
2813440	NITROGEN, TOTAL (4)	DO	23,677	23,197
	GAS: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	14,192	14,090
	PRODUCED FOR PIPELINE SHIPMENT.	DO		
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO	1,605	1,789
	LIQUID: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	7,062	6,558
	PRODUCED FOR BULK SHIPMENT TO PIPELINES OR TO OTHER AIR SEPARATION PLANTS.	DO	818	760
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO		
2813450	OXYGEN, TOTAL.	DO	34,695	32,367
	GAS: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	20	18
	PRODUCED FOR PIPELINE SHIPMENT	DO	24,211	23,055
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO	34,861	34,170
	LIQUID: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	5,008	4,683
	PRODUCED FOR BULK SHIPMENT TO PIPELINES OR TO OTHER AIR SEPARATION PLANTS.	DO	595	441
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO	(⁵)	(⁵)

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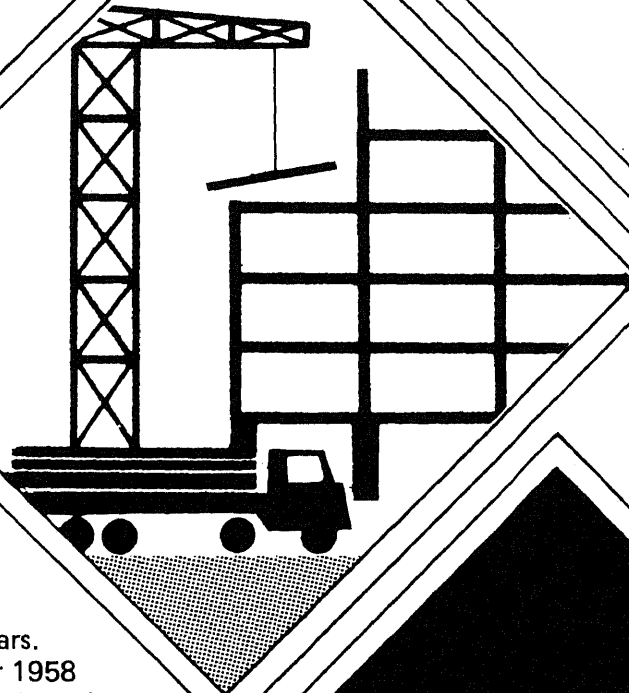
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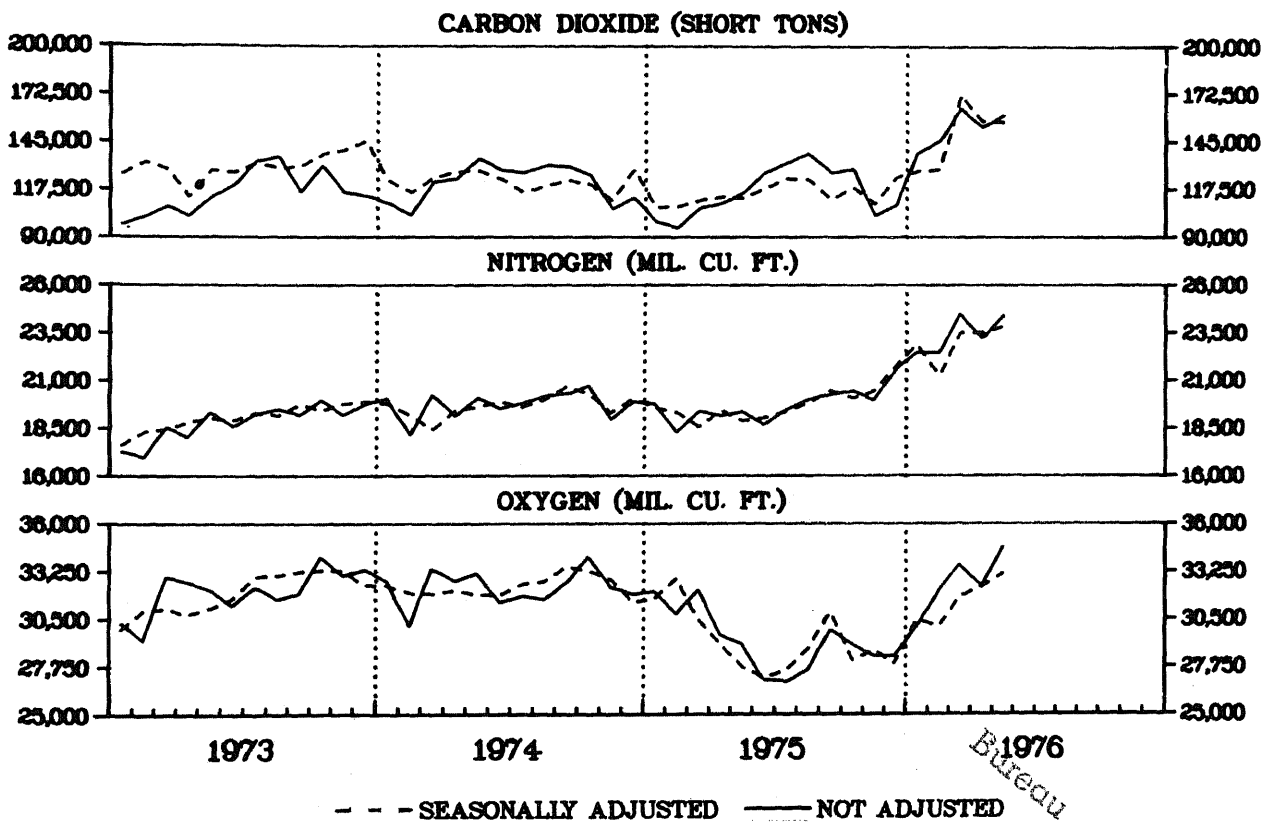
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Issued August 1976

SERIES: M28C(76)-6

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey and the seasonal adjustment program appears on pages 4 and 5.

PRODUCTION OF SELECTED INDUSTRIAL GASES
1973 TO 1976

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233.



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TABLE 1A.--SUMMARY OF PRODUCTION OF PRINCIPAL GASES: 1974 TO 1976

(Seasonally adjusted)					
Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide (2813311) and (2813331) (Short tons)	Hydrogen, high and low purity (100%) (2813420) (Mil. cu. ft.)	Nitrogen, high and low purity (100%) (2813440) (Mil. cu. ft.)	Oxygen, high and low purity (100%) (2813450) (Mil. cu. ft.)
1976					
June.....	632	155,841	6,712	23,780	32,946
May.....	615	156,279	6,388	23,826	33,145
April.....	634	156,987	7,099	23,504	32,375
March.....	638	172,021	7,374	23,486	31,772
February.....	606	129,014	5,890	21,245	30,068
January.....	600	127,940	6,428	22,887	30,444
1975					
December.....	617	124,403	6,268	21,746	27,895
November.....	565	109,204	5,563	20,447	28,704
October.....	515	118,356	5,873	20,075	28,118
September.....	581	111,704	6,065	20,450	30,905
August.....	607	123,080	6,013	19,812	28,760
July.....	580	123,595	5,420	19,356	27,525
June.....	544	118,062	5,298	19,029	27,098
May.....	546	112,404	5,422	18,878	27,781
April.....	515	113,123	4,782	19,438	29,071
March.....	448	111,118	4,727	18,567	30,405
February.....	492	107,556	4,623	19,317	32,849
January.....	468	106,966	4,956	19,551	31,652
1974					
December.....	587	129,037	5,577	20,037	31,456
November.....	606	110,799	6,208	19,298	32,785
October.....	620	120,139	6,625	20,276	33,260
September.....	615	122,504	6,127	20,676	33,511
August.....	604	119,407	6,152	20,003	32,653
July.....	592	115,699	6,104	19,603	32,490
June.....	633	123,318	6,106	19,867	31,881
May.....	645	128,105	5,864	19,602	31,898

TABLE 1B.--SUMMARY OF PRODUCTION OF PRINCIPAL GASES: 1974 TO 1976

(Not seasonally adjusted)						
Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons) ¹	Carbon dioxide, solid (2813331) (Short tons) ¹	Hydrogen, high and low purity (100%) (2813420) (Mil. cu. ft.) ¹	Nitrogen, high and low purity (100%) (2813440) (Mil. cu. ft.) ¹	Oxygen, high and low purity (100%) (2813450) (Mil. cu. ft.)
1976						
June.....	626	131,651	35,796	6,605	23,354	32,811
May.....	605	131,485	28,916	6,528	24,421	34,679
April.....	617	127,317	26,338	7,065	23,471	33,213
March.....	601	135,063	29,300	7,337	24,496	33,618
February.....	588	120,316	25,142	6,165	22,448	32,107
January.....	582	114,474	23,467	6,397	22,445	30,024
1975 ²						
December.....	635	85,804	22,723	6,344	21,551	28,341
November.....	590	83,572	18,956	5,386	19,958	28,390
October.....	552	104,191	24,893	6,137	20,436	29,018
September.....	588	101,935	25,428	5,967	20,245	29,854
August.....	592	109,353	28,719	5,857	19,971	27,358
July.....	567	102,731	30,017	5,485	19,453	26,895
June.....	539	99,549	27,306	5,214	18,688	27,014
May.....	537	90,671	24,698	5,541	19,350	29,067
April.....	501	87,855	21,667	4,772	19,165	29,595
March.....	422	84,990	21,277	4,859	19,364	32,199
February.....	477	77,998	17,399	4,416	18,282	30,763
January.....	483	77,932	21,279	4,981	19,785	32,095
1974 ²						
December.....	604	90,767	21,802	5,644	19,857	31,958
November.....	637	86,509	19,838	6,059	18,949	32,359
October.....	667	95,555	30,154	6,578	20,702	34,085
September.....	613	101,868	28,649	5,980	20,305	32,595
August.....	594	98,400	32,742	5,981	20,183	31,632
July.....	571	94,503	32,771	6,233	19,819	31,810
June.....	615	99,803	29,014	5,960	19,550	31,467
May.....	646	107,657	27,420	6,004	20,071	33,142

Note: Beginning in January of 1975, the data are adjusted for report period variation. Comparable data are not available for previous years; however, the effect of this adjustment is considered to be negligible at the total level. See "Reporting Period Adjustment" in the text. ¹See footnote 6, table 2. ²See text--Relationship between M28C and M28C-14 series for Industrial Gases.

Table 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

Product code	Chemical and basis	Unit of measure	April 1976 Quantity produced	March 1976 Quantity produced
2813200	Acetylene ¹	Mil. cu. ft.....	626	605
	Produced for pipeline shipment (excluding that shipped to be compressed).....	...do.....	² 514	261
	Produced for compression, including cylinder and pipeline.....	...do.....	112	344
	Produced for consumption in this plant.....	...do.....	(²)	
2813415	Argon, high purity.....	...do.....	417	440
	Produced for cylinder and bulk delivery shipment.....	...do.....		
	Produced for pipeline shipment.....	...do.....	417	440
	Produced for consumption in this plant.....	...do.....		
2813311	Carbon dioxide:			
	Liquid and gas ³	Short ton.....	131,651	131,485
2813331	Solid (dry ice).....	...do.....	35,796	28,916
2813420	Hydrogen, total ⁴	Mil. cu. ft.....	6,605	6,528
	Produced for cylinder and bulk delivery shipment.....	...do.....		
	Liquid produced for conversion to gas.....	...do.....	776	722
	Produced for pipeline shipment.....	...do.....		
	Liquid produced for government use.....	...do.....	2,019	1,812
	Produced for consumption in this plant.....	...do.....	3,810	3,994
2813440	Nitrogen, total ⁵.....	...do.....	23,354	24,421
	Gas:			
	Produced for cylinder and bulk delivery shipment.....	...do.....		
	Produced for pipeline shipment.....	...do.....	14,689	⁷ 15,049
	Produced for consumption in this plant.....	...do.....	1,609	1,487
	Liquid:			
	Produced for cylinder and bulk delivery shipment.....	...do.....	6,288	7,030
	Produced for bulk shipment to pipelines or to other air separation plants.....	...do.....		
	Produced for consumption in this plant.....	...do.....	768	855
2813450	Oxygen, total.....	...do.....	32,811	34,679
	Gas:			
	Produced for cylinder and bulk delivery shipment.....	...do.....	21	20
	Produced for pipeline shipment.....	...do.....	22,531	24,197
	Produced for consumption in this plant.....	...do.....	⁶ 4,655	⁶ 4,847
	Liquid:			
	Produced for cylinder and bulk delivery shipment.....	...do.....	4,903	5,013
	Produced for bulk shipment to pipelines or to other air separation plants.....	...do.....	701	602
	Produced for consumption in this plant.....	...do.....	(⁶)	(⁶)

Note: A reconciliation of information filed on Census Annual Form MA-28E.2, "Industrial Gases" and monthly Form M28A.2, "Production of Industrial Gases," indicates that a number of establishments have been omitted from data shown in the monthly series in 1975. The data for January 1976 have been revised to reflect these changes and additions; whereas, the monthly figures for 1975 are understated by approximately 20 percent for carbon dioxide and 10 percent for selected cells in hydrogen and nitrogen. The applicable monthly figures for 1975 will be corrected in the annual series to be issued sometime within the next several weeks.

¹Revised by 5 percent or more from previously published figures.

²Excludes quantities of acetylene produced and consumed by railroad shops, shipyards, and small establishments using portable generators. ³Data for (acetylene) produced for consumption in this plant, combined with, produced for pipeline shipment (excluding that shipped to be compressed), to avoid disclosure. ⁴Excludes production of liquid and gas CO₂ converted to and reported as dry ice and also amounts converted from pure CO₂ (liquid or solid) purchased or received from other plants. Also excludes quantities produced and consumed in plants manufacturing soda ash or urea. ⁵Excludes quantities produced and consumed in the manufacture of methanol and ammonia, but includes an unspecified amount of hydrogen produced for sale or interplant transfer to plants consuming this gas in the production of ammonia. Also excludes amounts of hydrogen produced in petroleum refineries for captive use. However, of the total shown for lower purity hydrogen prior to 1969, 70 to 75 percent was accounted for by petroleum refiners with captive hydrogen production. Not all such petroleum refineries were canvassed in this survey. ⁶Excludes amounts produced and used in the manufacture of ammonia and ammonia derivatives. ⁷Data for oxygen (liquid), produced for consumption in this plant, combined with data for oxygen (gas) produced for consumption in this plant to avoid disclosure.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census monthly Form M28A.2, "Industrial Gases - Production," and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such missing figures are imputed from the month-to-month movements shown by reporting firms and are generally limited to a maximum of 25 percent to any one item. Individual items with high imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to non-response, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, corrections. Figures which were revised significantly are indicated by footnotes.

REPORTING PERIOD ADJUSTMENT

Beginning January 1975 the data were adjusted for number of working days in the reporting period to compensate for differences in individual company reporting patterns (i.e., calendar month, 4-week, 5-week periods). It has been determined that the calendar month accounting system prevails in the industry. Hence, adjustments have been made to those reporting on other than a calendar month basis.

TRADING-DAY FACTORS

Variation in the rate of activity that arises from the existence of different numbers of trading days in the same month for different years can be an important cause of month-to-month irregular fluctuations. Unlike some other causes of irregular fluctuations such as unexpected economic developments, unusual weather, and statistical errors, trading-day irregularities can be approximately identified and removed so that the underlying trend-cycle stands out more clearly. Hence,

it is often possible to reduce the irregular factor by a trading-day adjustment.

SEASONAL ADJUSTMENT

This report presents seasonally adjusted data for a number of the most important series published monthly in Current Industrial Reports M28A.2, "Industrial Gases." The seasonal adjustment program largely eliminates the effect of normal seasonal variation (including variations due to vacations, weather, etc.) as measured over the time period for which data were used. The resulting information thus provides a better measure than the original data of the month-to-month variations which are due to factors that are not associated with a repetitive seasonal pattern.

RELATED REPORTS

Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Products, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement.

RELATIONSHIP BETWEEN M28C AND M28C-14 SERIES FOR INDUSTRIAL GASES

The data as shown in Table 1 reflect levels of production as reported by establishments on monthly from M28A.2. These data are revised in the annual publication collected on form MA-28E.2 and are shown in Table 9 of the annual report M28C-14. The actual data reported by establishments canvassed on the annual differ by varying amounts from those collected monthly due to receipt of revised data from the respondent and establishments reporting on the annual and not on the monthly. For these reasons, the monthly and annual data comprise two separate series and should be used as such for analytical purposes. Specifically, the monthly data should be useful in describing month-to-month changes while the annual

data provide a better indication of the level of production. Revisions to the 1975 monthly series based on findings from the 1974 annual will be forthcoming as soon as research into the differences are resolved.

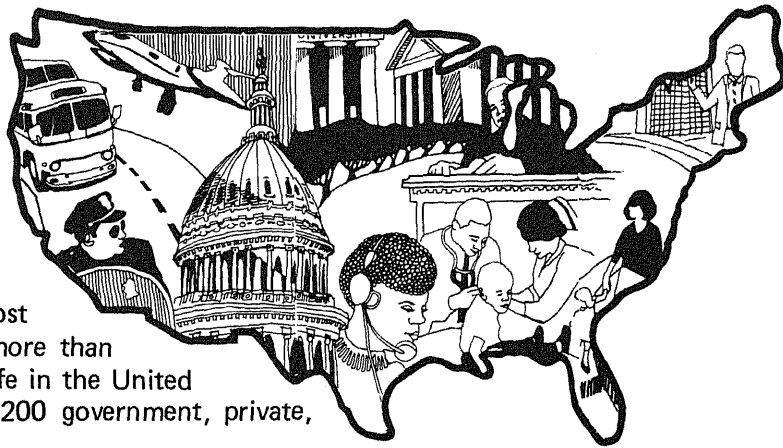
EXPLANATION OF TERMS

Production—Data shown for production represent total quantity of each chemical produced, including

quantity consumed in plants, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

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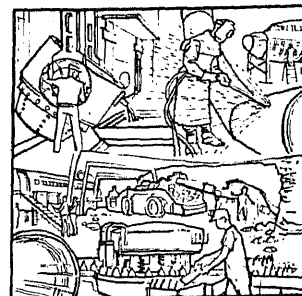
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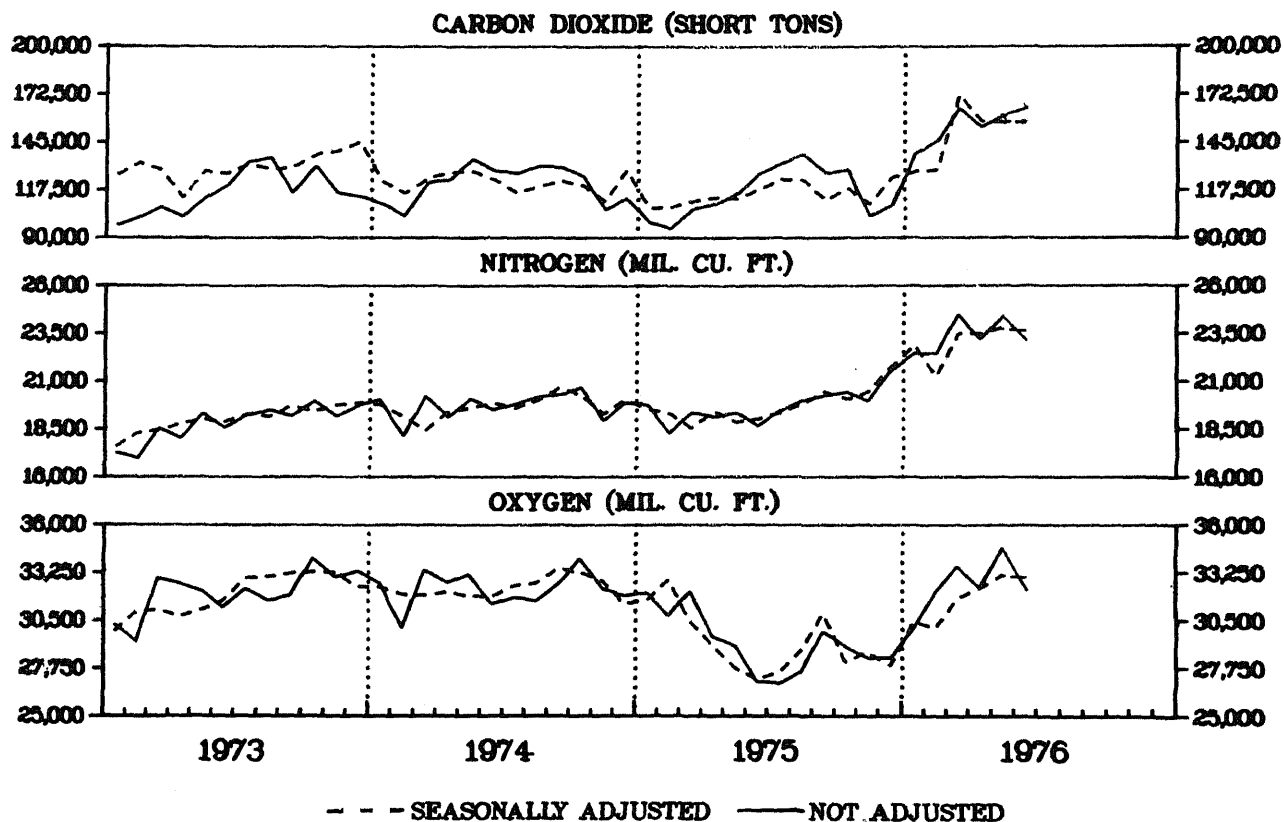
Industrial Gases

July 1976

Issued September 1976

SERIES: M28C(76)-7

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey and the seasonal adjustment program appears on pages 4 and 5.

PRODUCTION OF SELECTED INDUSTRIAL GASES
1973 TO 1976

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233.



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TABLE 1A.--SUMMARY OF PRODUCTION OF PRINCIPAL GASES: 1974 TO 1976

(Seasonally adjusted)					
Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide (2813311) and (2813331) (Short tons)	Hydrogen, high and low purity (100%) (2813420) (Mil. cu. ft.)	Nitrogen, high and low purity (100%) (2813440) (Mil. cu. ft.)	Oxygen, high and low purity (100%) (2813450) (Mil. cu. ft.)
1976					
July.....	619	176,916	6,515	23,750	33,720
June.....	629	156,840	6,946	23,650	33,074
May.....	615	156,280	6,389	23,826	33,145
April.....	634	156,988	7,101	23,782	33,222
March.....	639	172,021	7,138	23,487	31,761
February.....	607	163,998	6,453	23,719	34,284
January.....	564	148,723	6,365	22,180	29,609
1975					
December.....	630	165,957	7,015	23,244	28,082
November.....	578	146,012	6,285	21,969	28,936
October.....	526	158,133	6,584	21,580	30,225
September.....	633	161,860	6,871	21,986	31,120
August.....	624	164,215	6,810	21,282	28,925
July.....	594	164,625	6,135	20,788	27,722
June.....	557	157,413	5,986	20,355	27,274
May.....	557	149,886	6,171	20,241	25,961
April.....	523	149,434	5,383	20,707	29,183
March.....	458	148,496	5,400	19,814	30,493
February.....	543	137,709	5,311	20,590	32,939
January.....	477	142,630	5,684	20,851	31,722
1974					
December.....	591	155,935	6,335	20,281	31,559
November.....	636	146,110	6,963	20,106	33,040
October.....	646	151,596	6,992	20,940	33,321
September.....	641	151,473	6,857	21,181	33,679
August.....	635	147,122	6,784	20,741	33,205
July.....	624	145,300	7,015	20,501	32,733

TABLE 1B.--SUMMARY OF PRODUCTION OF PRINCIPAL GASES: 1974 TO 1976

(Not seasonally adjusted)						
Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons) ¹	Carbon dioxide, solid (2813331) (Short tons) ¹	Hydrogen, high and low purity (100%) (2813420) (Mil. cu. ft.) ¹	Nitrogen, high and low purity (100%) (2813440) (Mil. cu. ft.) ¹	Oxygen, high and low purity (100%) (2813450) (Mil. cu. ft.)
1976						
July.....	605	152,469	37,548	6,593	23,869	32,948
June.....	622	132,705	35,815	6,835	23,226	32,938
May.....	605	131,485	28,916	6,528	24,421	34,679
April.....	617	127,317	26,338	7,065	23,471	33,213
March.....	601	135,063	29,300	7,337	24,496	33,618
February.....	588	120,316	25,142	6,165	22,448	32,107
January.....	582	114,474	23,467	6,397	22,445	30,024
1975 ²						
December.....	648	116,682	28,096	7,099	23,035	28,530
November.....	603	113,647	23,438	6,085	21,443	28,618
October.....	563	141,687	30,779	6,879	21,968	29,196
September.....	640	138,619	31,441	6,759	21,765	30,061
August.....	606	148,706	35,510	6,633	21,452	27,716
July.....	580	139,701	37,115	6,209	20,892	27,087
June.....	551	135,374	33,762	5,890	19,990	27,162
May.....	548	123,301	30,538	6,306	20,746	29,175
April.....	509	119,472	26,790	5,356	20,436	29,726
March.....	431	115,576	26,309	5,550	20,665	32,276
February.....	526	100,628	21,513	5,074	19,487	30,847
January.....	492	105,978	26,311	5,712	21,101	32,166
1974 ²						
December.....	608	111,345	24,690	6,411	20,099	32,063
November.....	669	114,436	25,804	6,796	19,742	32,611
October.....	694	123,495	35,129	7,341	21,380	34,148
September.....	639	127,775	33,606	6,686	20,801	32,759
August.....	624	123,834	37,747	6,595	20,927	32,167
July.....	602	121,230	38,606	7,163	20,727	32,048

Note: Beginning in January of 1975, the data are adjusted for report period variation. Comparable data are not available for previous years; however, the effect of this adjustment is considered to be negligible at the total level. See "Reporting Period Adjustment" in the text. ¹See footnote 6, table 2. ²See text--Relationship between M28C and M28C-14 series for Industrial Gases.

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

PRODUCT CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	JULY 1976 QUANTITY PRODUCED	JUNE 1976 QUANTITY PRODUCED	JULY 1975 QUANTITY PRODUCED
2413200	ACETYLENE (1)	Mil.cu.ft..	605	622	580
	PRODUCED FOR PIPELINE SHIPMENT (EXCLUDING THAT SHIPPED TO BE COMPRESSED) . . . . .	...do.....	2506	2509	244
	PRODUCED FOR COMPRESSION, INCLUDING CYLINDER AND PIPELINE . . . . .	...do.....	99	113	336
	PRODUCED FOR CONSUMPTION IN THIS PLANT . . . . .	...do.....	(2)	(2)	
2813415	ARGON, HIGH PURITY . . . . .	...do.....	406	416	373
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT . . . . .	...do.....	406	416	373
	PRODUCED FOR PIPELINE SHIPMENT . . . . .	...do.....			
	PRODUCED FOR CONSUMPTION IN THIS PLANT . . . . .	...do.....			
2813311	CARBON DIOXIDE: LIQUID AND GAS (2)	Short ton..	152,469	132,705	139,701
2813331	SOLID (DRY ICE) . . . . .	...do.....	37,548	35,815	37,115
2813420	HYDROGEN, TOTAL (3)	Mil.cu.ft..	6,593	6,835	6,209
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT . . . . .	...do.....	684	775	541
	LIQUID PRODUCED FOR CONVERSION TO GAS . . . . .	...do.....			
	PRODUCED FOR PIPELINE SHIPMENT . . . . .	...do.....	1,861	1,971	1,751
	LIQUID PRODUCED FOR GOVERNMENT USE . . . . .	...do.....			
	PRODUCED FOR CONSUMPTION IN THIS PLANT . . . . .	...do.....	4,048	4,089	3,917
2813440	NITROGEN, TOTAL (4) . . . . .	...do.....	23,869	23,226	20,892
	GAS: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT . . . . .	...do.....	14,357	14,597	12,124
	PRODUCED FOR PIPELINE SHIPMENT . . . . .	...do.....			
	PRODUCED FOR CONSUMPTION IN THIS PLANT . . . . .	...do.....	1,529	1,581	1,834
	LIQUID: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT . . . . .	...do.....	6,999	6,285	6,194
	PRODUCED FOR BULK SHIPMENT TO PIPELINES OR TO OTHER AIR SEPARATION PLANTS . . . . .	...do.....	984	763	740
	PRODUCED FOR CONSUMPTION IN THIS PLANT . . . . .	...do.....			
2813450	OXYGEN, TOTAL . . . . .	...do.....	32,948	32,938	27,087
	GAS: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT . . . . .	...do.....	15	21	14
	PRODUCED FOR PIPELINE SHIPMENT . . . . .	...do.....	23,117	22,531	18,138
	PRODUCED FOR CONSUMPTION IN THIS PLANT . . . . .	...do.....	64,343	64,773	64,297
	LIQUID: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT . . . . .	...do.....	4,766	4,912	4,034
	PRODUCED FOR BULK SHIPMENT TO PIPELINES OR TO OTHER AIR SEPARATION PLANTS . . . . .	...do.....	707	701	604
	PRODUCED FOR CONSUMPTION IN THIS PLANT . . . . .	...do.....	(6)	(6)	(6)

Note: July 1975 data from 1975 Annual Report Series MA28C (75)-14 "Industrial Gases" Issued in August 1976.

¹Revised by 5 percent or more from previously published figures.

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***Monthly Retail Trade Report**—Data are given for the United States, current month, with comparisons for previous months on estimates of monthly retail sales by major kind-of-business groups and selected individual kinds of business; separate figures are shown, in more limited kind-of-business detail, for firms operating 11 or more retail stores. Summary sales data are presented for geographic regions and divisions, selected metropolitan statistical areas, and cities. Also included are national estimates of end-of-month accounts receivable balances outstanding for all retail stores and, separately, for firms operating 11 or more retail stores. Separate data are shown for charge accounts and installment accounts. National sales and accounts receivable estimates are shown adjusted for seasonal variations and trading day differences, as well as in unadjusted form. This report

also includes data on department store sales published separately in *Monthly Department Store Sales for Selected Areas* (see blow).

***Annual Retail Trade Report**—Estimates of annual sales and purchases, and of year-end accounts receivable, balances and inventories held by retailers in the United States by major kind-of-business groups and selected individual kinds of business. Separate figures shown in more limited kind-of-business detail for firms operating 11 or more retail stores. Also shown are sales-inventory ratios and per capita sales by kind-of-business for the United States, by major kind-of-business groups. Per capita sales estimates are also shown in limited kind-of-business detail for geographic divisions, and for the larger States and standard metropolitan statistical areas.

Annual Subscription \$30.10
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†Monthly Department Store Sales for Selected Areas—Monthly dollar sales volume and the percent change in sales compared with the previous month and the same month in the previous year; cumulative year-to-date comparisons with data for the previous year. The number of department stores in the current month is also shown. Data are collected in about 200 standard metropolitan statistical areas, cities, and other areas.

Annual subscription \$3.60

Selected Service Trades

†Monthly Selected Services Receipts—This report provides estimates of monthly receipts of six major groups of service businesses: hotels, motels,

tourist courts, trailer parks, and camps; personal services; business services; automotive services; miscellaneous repair services; and motion picture, amusement, and recreation services. Also included are receipts estimates for the following more detailed kinds of business categories: hotels, tourist courts, and motels; laundries, laundry services, and cleaning and dyeing plants; beauty shops; barber shops; advertising; advertising agencies; and automobile repair shops. Comparable data for previous months and for the same month in the previous year, plus percent changes are also shown. Data are shown both unadjusted and adjusted for seasonal variations and trading day differences but not for price changes.

Annual subscription \$3.60

Wholesale Trade

***Monthly Wholesale Trade Report**—This report includes estimated dollar sales, end-of-month inventories, and stock-sales ratios of merchant wholesalers, by kind of business for the current month, with comparisons for previous months. Dollar volume sales estimates are shown by geographic division in total and for durable and nondurable kind-of-business subtotals. Sales and inventory trends (percent changes) are shown by detailed kinds-of-business at the national level and for selected kinds-of-businesses by geographic division. Measures of sampling variability are given. United States data are shown adjusted for seasonal variations and in the case of sales, also for trading day differences.

Annual Subscription \$7.20

Other Business Reports

†Canned Food Report—This report is issued for five dates—January 1, April 1, June 1, July 1, and November 1—to show total stocks of wholesale distributors and canners, including warehouses of retail multiunit organizations, of selected canned food items. In the January 1 report, separate data are shown for the No. 10 can size as well as for warehouse stocks of retail multiunit organizations.

Annual subscription \$1.25

†Green Coffee Inventories and Roastings—This quarterly report provides estimates of green coffee inventories held by roasters, importers, and dealers, the quantity of green coffee roasted, and the amount roasted for soluble use, by quarters, for the current and previous 3 years. Also included are quarterly imports of green coffee.

Annual Subscription \$1.00

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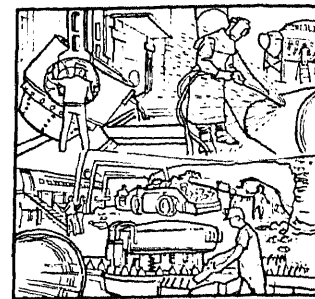
†Available from Subscriber Services Section (Publications), Bureau of the Census, Washington, D.C. 20233.

Publications Order Forms furnishing additional information of the various reports listed here are available free of charge from the Subscriber Services Section (Publications), Bureau of the Census, Washington, D.C. 20233



Industrial Gases

August 1976

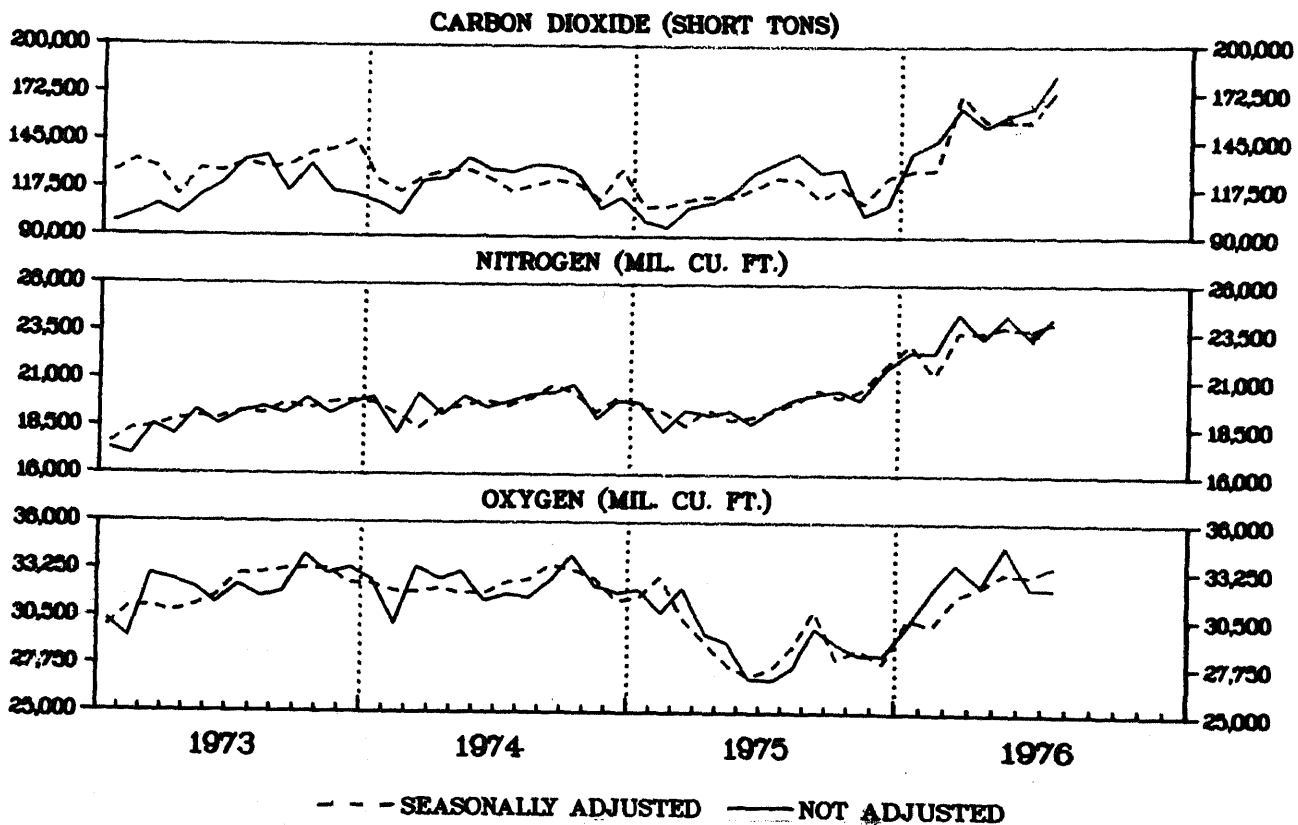


Issued October 1976

SERIES: M28C(76)-8

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PRODUCTION OF SELECTED INDUSTRIAL GASES 1973 TO 1976



Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233, or call James L. Monahan (301) 763-5353.



U.S. Department of Commerce BUREAU OF THE CENSUS

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TABLE 1A.--SUMMARY OF PRODUCTION OF PRINCIPAL GASES: 1974 TO 1976

(Seasonally adjusted)

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide (2813311) and (2813311) (Short tons)	Hydrogen, high and low purity (100%) (2813420) (mil. cu. ft.)	Nitrogen, high and low purity (100%) (2813440) (Mil. cu. ft.)	Oxygen, high and low purity (100%) (2813450) (Mil. cu. ft.)
1976					
August.....	643	176,896	6,670	24,908	34,789
July.....	617	174,657	6,277	23,794	33,669
June.....	629	156,840	6,946	23,650	33,074
May.....	615	156,280	6,389	23,826	33,145
April.....	634	156,988	7,101	23,782	33,222
March.....	639	172,021	7,138	23,487	31,761
February.....	607	163,998	6,453	23,719	34,284
January.....	564	148,723	6,365	22,180	29,609
1975					
December.....	630	165,957	7,015	23,244	28,082
November.....	578	146,012	6,285	21,969	28,936
October.....	526	158,133	6,584	21,580	30,225
September.....	633	161,860	6,871	21,986	31,120
August.....	624	164,215	6,810	21,282	28,925
July.....	594	164,625	6,135	20,788	27,722
June.....	557	157,413	5,986	20,355	27,274
May.....	557	149,886	6,171	20,241	25,961
April.....	523	149,434	5,383	20,707	29,183
March.....	458	148,496	5,400	19,814	30,493
February.....	543	137,709	5,311	20,590	32,939
January.....	477	142,630	5,684	20,851	31,722
1974					
December.....	591	155,935	6,335	20,281	31,559
November.....	636	146,110	6,963	20,106	33,040
October.....	646	151,596	6,992	20,940	33,321
September.....	641	151,473	6,857	21,181	33,679
August.....	635	147,122	6,784	20,741	33,205

TABLE 1B.--SUMMARY OF PRODUCTION PRINCIPAL GASES: 1974 TO 1976

(Not seasonally adjusted)

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons) ¹	Carbon dioxide, solid (2813331) (Short tons) ¹	Hydrogen, high and low purity (100%) (2813420) (Mil. cu. ft.) ¹	Nitrogen, high and low purity (100%) (2813440) (Mil. cu. ft.) ¹	Oxygen, high and low purity (100%) (2813450) (Mil. cu. ft.)
1976						
August.....	625	157,588	40,855	6,497	25,108	33,335
July.....	603	150,201	37,390	6,353	23,913	32,898
June.....	622	132,705	35,815	6,835	23,226	32,938
May.....	605	131,485	28,916	6,528	24,421	34,679
April.....	617	127,317	26,338	7,065	23,471	33,213
March.....	601	135,063	29,300	7,337	24,496	33,618
February.....	588	120,316	25,142	6,165	22,448	32,107
January.....	582	114,474	23,467	6,397	22,445	30,024
1975²						
December.....	648	116,682	28,096	7,099	23,035	28,530
November.....	603	113,647	23,438	6,085	21,443	28,618
October.....	563	141,687	30,779	6,879	21,968	29,196
September.....	640	138,619	31,441	6,759	21,765	30,061
August.....	606	148,706	35,510	6,633	21,452	27,716
July.....	580	139,701	37,115	6,209	20,892	27,087
June.....	551	135,374	33,762	5,890	19,990	27,162
May.....	548	123,301	30,538	6,306	20,746	29,175
April.....	509	119,472	26,790	5,356	20,436	29,726
March.....	431	115,576	26,309	5,550	20,665	32,276
February.....	526	100,628	21,513	5,074	19,487	30,847
January.....	492	105,978	26,311	5,712	21,101	32,166
1974²						
December.....	608	111,345	24,690	6,411	20,099	32,063
November.....	669	114,436	25,804	6,796	19,742	32,611
October.....	694	123,495	35,129	7,341	21,380	34,148
September.....	639	127,775	33,606	6,686	20,801	32,759
August.....	624	123,834	37,747	6,595	20,927	32,167

Note: Beginning in January of 1975, the data are adjusted for report period variation. Comparable data are not available for previous years; however, the effect of this adjustment is considered to be negligible at the total level. See "Reporting Period Adjustment" in the text. ¹See footnote 6, table 2. ²See text--Relationship between M28C and M28C-14 series for Industrial Gases.

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

PRODUCT CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	AUGUST 1976 QUANTITY PRODUCED	JULY 1976 QUANTITY PRODUCED	AUGUST 1975 QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	625	603	606
	PRODUCED FOR PIPELINE SHIPMENT (EXCLUDING THAT SHIPPED TO BE COMPRESSED)	DO	2534	2506	259
	PRODUCED FOR COMPRESSION, INCLUDING CYLINDER AND PIPELINE	DO	102	97	347
	PRODUCED FOR CONSUMPTION IN THIS PLANT.	DO	(2)	(2)	
2813415	ARGON, HIGH PURITY	DO	449	406	343
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO			
	PRODUCED FOR PIPELINE SHIPMENT.	DO	449	406	343
	PRODUCED FOR CONSUMPTION IN THIS PLANT.	DO			
2813311	CARBON DIOXIDE:				
	LIQUID AND GAS (2)	S.TONS	157,588	150,201	148,706
2813331	SOLID (DRY ICE)	DO	40,855	37,390	35,510
2813420	HYDROGEN, TOTAL (3)	MIL.CU.FT	6,497	6,353	6,633
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	690	684	522
	LIQUID PRODUCED FOR CONVERSION TO GAS	DO			
	PRODUCED FOR PIPELINE SHIPMENT.	DO	2,080	1,861	1,878
	LIQUID PRODUCED FOR GOVERNMENT USE.	DO	3,727	3,808	4,233
	PRODUCED FOR CONSUMPTION IN THIS PLANT.	DO			
2813440	NITROGEN, TOTAL (4)	DO	25,108	23,913	19,971
	GAS:				
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO			
	PRODUCED FOR PIPELINE SHIPMENT.	DO	14,997	14,383	12,540
	PRODUCED FOR CONSUMPTION IN THIS PLANT.	DO	1,772	1,528	1,849
	LIQUID:				
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	7,363	7,028	5,750
	PRODUCED FOR BULK SHIPMENT TO PIPELINES OR TO OTHER AIR SEPARATION PLANTS.	DO			
	PRODUCED FOR CONSUMPTION IN THIS PLANT.	DO	976	974	724
2813450	OXYGEN, TOTAL.	DO	33,335	32,898	27,716
	GAS:				
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	19	16	14
	PRODUCED FOR PIPELINE SHIPMENT.	DO	23,121	23,117	18,937
	PRODUCED FOR CONSUMPTION IN THIS PLANT.	DO	64,353	64,348	64,457
	LIQUID:				
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	5,090	4,709	3,643
	PRODUCED FOR BULK SHIPMENT TO PIPELINES OR TO OTHER AIR SEPARATION PLANTS.	DO	752	708	665
	PRODUCED FOR CONSUMPTION IN THIS PLANT.	DO	(6)	(6)	(6)

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Industrial Gases

September 1976

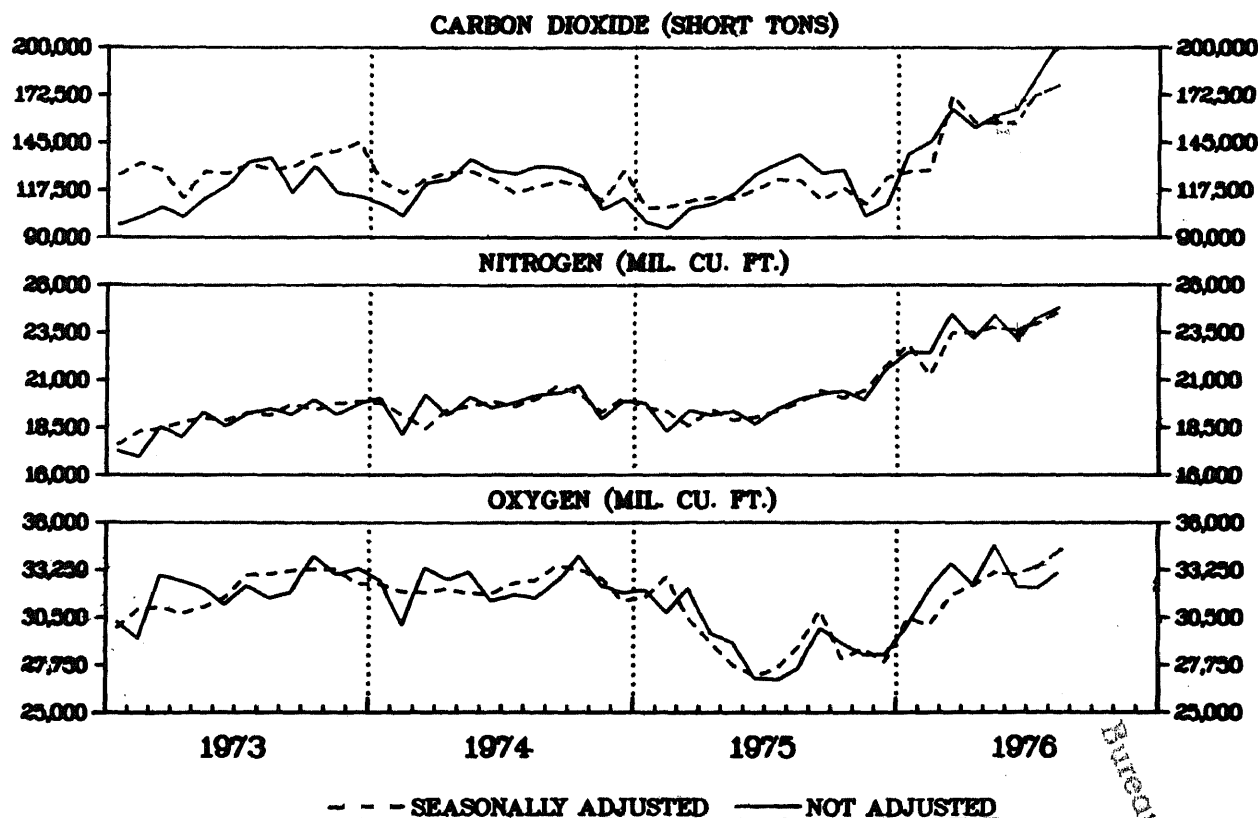


Issued November 1976

SERIES: M28C(76)-9

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(Seasonally adjusted)

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August.....	658	178,534	6,727	25,216	34,687
July.....	617	174,657	6,277	23,794	33,669
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May.....	615	156,280	6,389	23,826	33,145
April.....	634	156,988	7,101	23,782	33,222
March.....	639	172,021	7,138	23,487	31,761
February.....	607	163,998	6,453	23,719	34,284
January.....	564	148,723	6,365	22,180	29,609
1975					
December.....	630	165,957	7,015	23,244	28,082
November.....	578	146,012	6,285	21,969	28,936
October.....	526	158,133	6,584	21,580	30,225
September.....	633	161,860	6,871	21,986	31,120
August.....	624	164,215	6,810	21,282	28,925
July.....	594	164,625	6,135	20,788	27,722
June.....	557	157,413	5,986	20,355	27,274
May.....	557	149,886	6,171	20,241	25,961
April.....	523	149,434	5,383	20,707	29,183
March.....	458	148,496	5,400	19,814	30,493
February.....	543	137,709	5,311	20,590	32,939
January.....	477	142,630	5,684	20,851	31,722
1974					
December.....	591	155,935	6,335	20,281	31,559
November.....	636	146,110	6,963	20,106	33,040
October.....	646	151,596	6,992	20,940	33,321
September.....	641	151,473	6,857	21,181	33,679

TABLE 1B.--SUMMARY OF PRODUCTION PRINCIPAL GASES: 1974 TO 1976

(Not seasonally adjusted)

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons) ¹	Carbon dioxide, solid (2813331) (Short tons) ¹	Hydrogen, high and low purity (100%) (2813420) (Mil. cu. ft.) ¹	Nitrogen, high and low purity (100%) (2813440) (Mil. cu. ft.) ¹	Oxygen, high and low purity (100%) (2813450) (Mil. cu. ft.)
1976						
September.....	626	157,129	34,553	6,651	24,523	30,930
August.....	639	159,424	40,855	6,552	25,342	33,237
July.....	603	150,201	37,390	6,353	23,913	32,898
June.....	622	132,705	35,815	6,835	23,226	32,938
May.....	605	131,485	28,916	6,528	24,421	34,679
April.....	617	127,317	26,338	7,065	23,471	33,213
March.....	601	135,063	29,300	7,337	24,496	33,618
February.....	588	120,316	25,142	6,165	22,448	32,107
January.....	582	114,474	23,467	6,397	22,445	30,024
1975 ²						
December.....	648	116,682	28,096	7,099	23,035	28,530
November.....	603	113,647	23,438	6,085	21,443	28,618
October.....	563	141,687	30,779	6,879	21,968	29,196
September.....	640	138,619	31,441	6,759	21,765	30,061
August.....	606	148,706	35,510	6,633	21,452	27,716
July.....	580	139,701	37,115	6,209	20,892	27,087
June.....	551	135,374	33,762	5,890	19,990	27,162
May.....	548	123,301	30,538	6,306	20,746	29,175
April.....	509	119,472	26,790	5,356	20,436	29,726
March.....	431	115,576	26,309	5,550	20,665	32,276
February.....	526	100,628	21,513	5,074	19,487	30,847
January.....	492	105,978	26,311	5,712	21,101	32,166
1974 ²						
December.....	608	111,345	24,690	6,411	20,099	32,063
November.....	669	114,436	25,804	6,796	19,742	32,611
October.....	694	123,495	35,129	7,341	21,380	34,148
September.....	639	127,775	33,606	6,686	20,801	32,759

Note: Beginning in January of 1975, the data are adjusted for report period variation. Comparable data are not available for previous years; however, the effect of this adjustment is considered to be negligible at the total level. See "Reporting Period Adjustment" in the text. ¹See footnote 6, table 2. ²See text--Relationship between M28C and M28C-14 series for Industrial Gases.

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

PRODUCT CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	SEPTEMBER 1976	AUGUST 1976	SEPTEMBER 1975
			QUANTITY PRODUCED	QUANTITY PRODUCED	QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	626	639	640
	PRODUCED FOR PIPELINE SHIPMENT (EXCLUDING THAT SHIPPED TO BE COMPRESSED)	DO	² 513	² 537	255
	PRODUCED FOR COMPRESSION, INCLUDING CYLINDER AND PIPELINE	DO	113	102	385
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO	(²)	(²)	
2813415	ARGON, HIGH PURITY	DO	440	443	380
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	440	443	380
	PRODUCED FOR PIPELINE SHIPMENT	DO			
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO			
2813311	CARBON DIOXIDE: LIQUID AND GAS (3)	S.TONS	157,129	159,424	138,619
2813331	SOLID (DRY ICE)	DO	34,553	40,855	31,441
2813420	HYDROGEN, TOTAL (4)	MIL.CU.FT	6,651	6,552	6,759
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	783	693	547
	LIQUID PRODUCED FOR CONVERSION TO GAS	DO			
	PRODUCED FOR PIPELINE SHIPMENT	DO	1,943	2,121	1,920
	LIQUID PRODUCED FOR GOVERNMENT USE	DO			
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO	3,925	3,738	4,296
2813440	NITROGEN, TOTAL (5)	DO	24,523	25,342	21,765
	GAS: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	15,204	15,110	13,030
	PRODUCED FOR PIPELINE SHIPMENT	DO			
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO			
	LIQUID: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	7,125	7,497	6,255
	PRODUCED FOR BULK SHIPMENT TO PIPELINES OR TO OTHER AIR SEPARATION PLANTS	DO	771	976	659
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO			
2813450	OXYGEN, TOTAL	DO	30,930	33,237	30,061
	GAS: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	20	19	14
	PRODUCED FOR PIPELINE SHIPMENT	DO	21,224	23,108	20,278
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO	⁶ 4,338	⁶ 4,373	⁶ 4,489
	LIQUID: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	4,718	4,985	4,648
	PRODUCED FOR BULK SHIPMENT TO PIPELINES OR TO OTHER AIR SEPARATION PLANTS	DO	630	752	632
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO	(⁶)	(⁶)	(⁶)

¹Excludes quantities of acetylene produced and consumed by railroad shops, shipyards, and small establishments using portable generators.

²Data for (acetylene) produced for consumption in this plant, combined with, produced for pipeline shipment (excluding that shipped to be compressed), to avoid disclosure.

³Excludes production of liquid and gas CO₂ converted to and reported as dry ice and also amounts converted from pure CO₂ (liquid or solid) purchased or received from other plants. Also excludes quantities produced and consumed in plants manufacturing soda ash or urea.

⁴Excludes quantities produced and consumed in the manufacture of methanol and ammonia, but includes an unspecified amount of hydrogen produced for sale or interplant transfer to plants consuming this gas in the production of ammonia. Also excludes amounts of hydrogen produced in petroleum refineries for captive use. However, of the total shown for lower purity hydrogen prior to 1969, 70 to 75 percent was accounted for by petroleum refiners with captive hydrogen production. Not all such petroleum refineries were canvassed in this survey.

⁵Excludes amounts produced and used in the manufacture of ammonia and ammonia derivatives.

⁶Data for oxygen (liquid), produced for consumption in this plant, combined with data for oxygen (gas) produced for consumption in this plant to avoid disclosure.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census monthly Form M28A.2, "Industrial Gases - Production," and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such missing figures are imputed from the month-to-month movements shown by reporting firms and are generally limited to a maximum of 25 percent to any one item. Individual items with higher imputation rates are footnoted.

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Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, corrections. Figures which were revised significantly are indicated by footnotes.

REPORTING PERIOD ADJUSTMENT

Beginning January 1975 the data were adjusted for number of working days in the reporting period to compensate for differences in individual company reporting patterns (i.e., calendar month, 4-week, 5-week periods). It has been determined that the calendar month accounting system prevails in the industry. Hence, adjustments have been made to those reporting on other than a calendar month basis.

TRADING-DAY FACTORS

Variation in the rate of activity that arises from the existence of different numbers of trading days in the same month for different years can be an important cause of month-to-month irregular fluctuations. Unlike some other causes of irregular fluctuations such as unexpected economic developments, unusual weather, and statistical errors, trading-day irregularities can be approximately identified and removed so that the underlying trend-cycle stands out more clearly. Hence,

it is often possible to reduce the irregular factor by a trading-day adjustment.

SEASONAL ADJUSTMENT

This report presents seasonally adjusted data for a number of the most important series published monthly in Current Industrial Reports M28A.2, "Industrial Gases." The seasonal adjustment program largely eliminates the effect of normal seasonal variation (including variations due to vacations, weather, etc.) as measured over the time period for which data were used. The resulting information thus provides a better measure than the original data of the month-to-month variations which are due to factors that are not associated with a repetitive seasonal pattern.

RELATED REPORTS

Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Products, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement.

RELATIONSHIP BETWEEN M28C AND M28C-14 SERIES FOR INDUSTRIAL GASES

The data as shown in Table 1 reflect levels of production as reported by establishments on monthly from M28A.2. These data are revised in the annual publication collected on form MA-28E.2 and are shown in Table 9 of the annual report M28C-14. The actual data reported by establishments canvassed on the annual differ by varying amounts from those collected monthly due to receipt of revised data from the respondent and establishments reporting on the annual and not on the monthly. For these reasons, the monthly and annual data comprise two separate series and should be used as such for analytical purposes. Specifically, the monthly data should be useful in describing month-to-month changes while the annual

data provide a better indication of the level of production. Revisions to the 1975 monthly series based on findings from the 1974 annual will be forthcoming as soon as research into the differences are resolved.

EXPLANATION OF TERMS

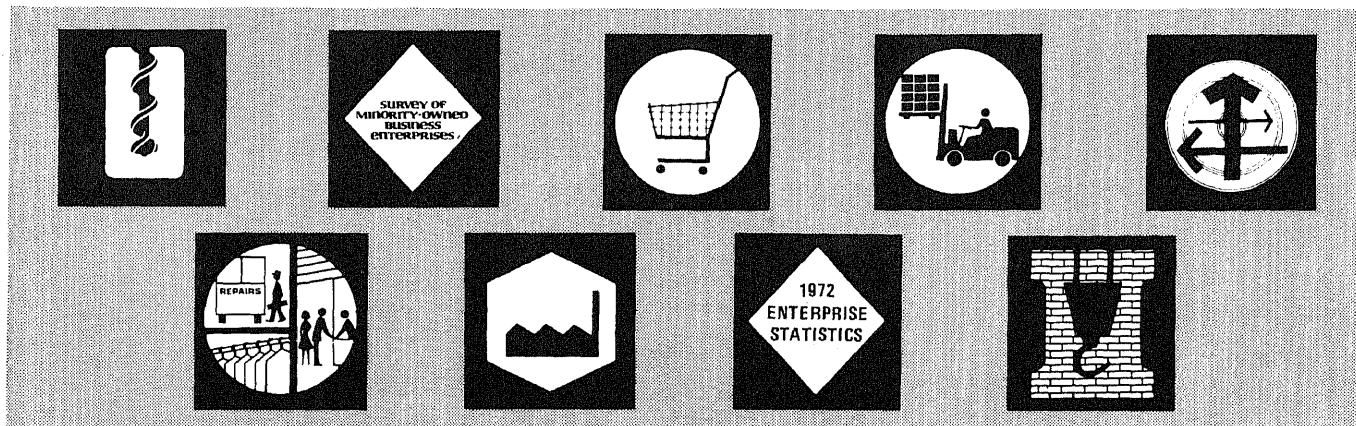
Production—Data shown for production represent total quantity of each chemical produced, including

quantity consumed in plants, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced “in process” as an intermediate to the end products.

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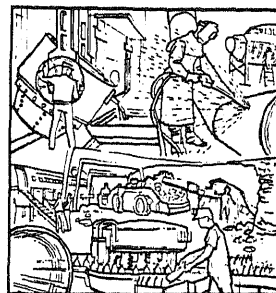
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Industrial Gases

October 1976

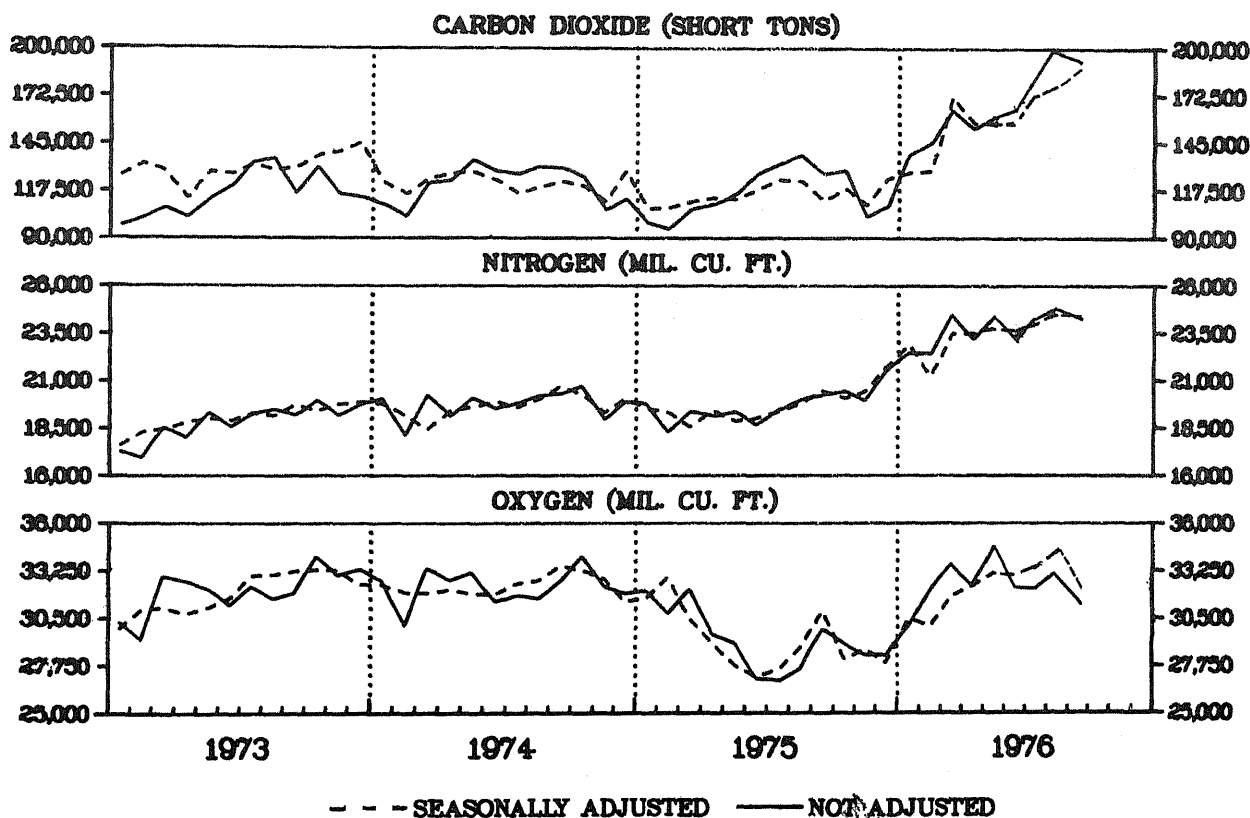


Issued December 1976

SERIES: M28C(76)-10

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey and the seasonal adjustment program appears on pages 4 and 5.

PRODUCTION OF SELECTED INDUSTRIAL GASES 1973 TO 1976



Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233, or call Melva Martin, (301) 763-7838.



U.S. Department of Commerce BUREAU OF THE CENSUS

For sale by the Subscriber Services Section (Publications), Bureau of the Census, Washington, D.C. 20233, or any U.S. Department of Commerce district office. Postage stamps not acceptable; currency submitted at sender's risk. Remittances from foreign countries must be by international money order or by a draft on a U.S. bank. Price: 25 cents per copy, \$3.50 per year.

TABLE 1A.--SUMMARY OF PRODUCTION OF PRINCIPAL GASES: 1974 TO 1976

(Seasonally adjusted)

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide (2813311) and (2813311) (Short tons)	Hydrogen, high and low purity (100%) (2813420) (mil. cu. ft.)	Nitrogen, high and low purity (100%) (2813440) (Mil. cu. ft.)	Oxygen, high and low purity (100%) (2813450) (Mil. cu. ft.)
1976					
October.....	545	160,558	6,673	25,740	31,552
September.....	619	188,282	6,735	24,781	32,096
August.....	658	178,534	6,727	25,216	34,687
July.....	617	174,657	6,277	23,794	33,669
June.....	629	156,840	6,946	23,650	33,074
May.....	615	156,280	6,389	23,826	33,145
April.....	634	156,988	7,101	23,782	33,222
March.....	639	172,021	7,138	23,487	31,761
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November.....	578	146,012	6,285	21,969	28,936
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February.....	543	137,709	5,311	20,590	32,939
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October.....	646	151,596	6,992	20,940	33,321

TABLE 1B.--SUMMARY OF PRODUCTION PRINCIPAL GASES: 1974 TO 1976

(Not seasonally adjusted)

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons) ¹	Carbon dioxide, solid (2813331) (Short tons) ¹	Hydrogen, high and low purity (100%) (2813420) (Mil. cu. ft.) ¹	Nitrogen, high and low purity (100%) (2813440) (Mil. cu. ft.) ¹	Oxygen, high and low purity (100%) (2813450) (Mil. cu. ft.)
1976						
October.....	584	144,386	30,726	6,973	26,203	32,562
September.....	626	157,029	34,488	6,626	24,532	31,044
August.....	639	159,424	40,855	6,552	25,342	33,237
July.....	603	150,201	37,390	6,353	23,913	32,898
June.....	622	132,705	35,815	6,835	23,226	32,938
May.....	605	131,485	28,916	6,528	24,421	34,679
April.....	617	127,317	26,338	7,065	23,471	33,213
March.....	601	135,063	29,300	7,337	24,496	33,618
February.....	588	120,316	25,142	6,165	22,448	32,107
January.....	582	114,474	23,467	6,397	22,445	30,024
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November.....	603	113,647	23,438	6,085	21,443	28,618
October.....	563	141,687	30,779	6,879	21,968	29,196
September.....	640	138,619	31,441	6,759	21,765	30,061
August.....	606	148,706	35,510	6,633	21,452	27,716
July.....	580	139,701	37,115	6,209	20,892	27,087
June.....	551	135,374	33,762	5,890	19,990	27,162
May.....	548	123,301	30,538	6,306	20,746	29,175
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October.....	694	123,495	35,129	7,341	21,380	34,148

Note: Beginning in January of 1975, the data are adjusted for report period variation. Comparable data are not available for previous years; however, the effect of this adjustment is considered to be negligible at the total level. See "Reporting Period Adjustment" in the text. ¹See footnote 6, table 2. ²See text--Relationship between M28C and M28C-14 series for Industrial Gases.

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

PRODUCT CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	OCTOBER 1976 QUANTITY PRODUCED	SEPTEMBER 1976 QUANTITY PRODUCED	OCTOBER 1975 QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	584	626	563
	PRODUCED FOR PIPELINE SHIPMENT (EXCLUDING THAT SHIPPED TO BE COMPRESSED)	DO	² 461	² 511	216
	PRODUCED FOR COMPRESSION, INCLUDING CYLINDER AND PIPELINE	DO	123	115	347
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO	(²)	(²)	
2813415	ARGON, HIGH PURITY	DO	455	395	386
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	455	^r 395	386
	PRODUCED FOR PIPELINE SHIPMENT	DO			
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO			
2813311	CARBON DIOXIDE: LIQUID AND GAS (3)	S.TONS	144,386	157,029	141,687
2813331	SOLID (DRY ICE)	DO	30,726	34,488	30,779
2813420	HYDROGEN, TOTAL (4)	MIL.CU.FT	6,973	6,626	6,879
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	881	^r 826	706
	LIQUID PRODUCED FOR CONVERSION TO GAS	DO			
	PRODUCED FOR PIPELINE SHIPMENT	DO	2,005	1,980	1,650
	LIQUID PRODUCED FOR GOVERNMENT USE	DO	4,087	3,910	4,523
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO			
2813440	NITROGEN, TOTAL (5)	DO	26,203	24,532	21,968
	GAS: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	16,471	15,140	12,664
	PRODUCED FOR PIPELINE SHIPMENT	DO			
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO	1,509	1,436	1,741
	LIQUID: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	7,276	7,176	6,833
	PRODUCED FOR BULK SHIPMENT TO PIPELINES OR TO OTHER AIR SEPARATION PLANTS	DO	947	^r 810	730
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO			
2813450	OXYGEN, TOTAL	DO	32,562	31,044	29,196
	GAS: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	15	20	14
	PRODUCED FOR PIPELINE SHIPMENT	DO	21,938	21,260	20,261
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO	⁶ 3,970	⁶ 4,326	⁶ 3,713
	LIQUID: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	5,863	4,797	4,732
	PRODUCED FOR BULK SHIPMENT TO PIPELINES OR TO OTHER AIR SEPARATION PLANTS	DO	776	641	476
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO	(⁶)	(⁶)	(⁶)

^rRevised by 5 percent or more from previously published figures.

¹Excludes quantities of acetylene produced and consumed by railroad shops, shipyards, and small establishments using portable generators.

²Data for (acetylene) produced for consumption in this plant, combined with, produced for pipeline shipment (excluding that shipped to be compressed), to avoid disclosure.

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SEASONAL ADJUSTMENT

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RELATED REPORTS

Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Products, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement.

RELATIONSHIP BETWEEN M28C AND M28C-14 SERIES FOR INDUSTRIAL GASES

The data as shown in Table 1 reflect levels of production as reported by establishments on monthly from M28A.2. These data are revised in the annual publication collected on form MA-28E.2 and are shown in Table 9 of the annual report M28C-14. The actual data reported by establishments canvassed on the annual differ by varying amounts from those collected monthly due to receipt of revised data from the respondent and establishments reporting on the annual and not on the monthly. For these reasons, the monthly and annual data comprise two separate series and should be used as such for analytical purposes. Specifically, the monthly data should be useful in describing month-to-month changes while the annual

data provide a better indication of the level of production. Revisions to the 1975 monthly series based on findings from the 1974 annual will be forthcoming as soon as research into the differences are resolved.

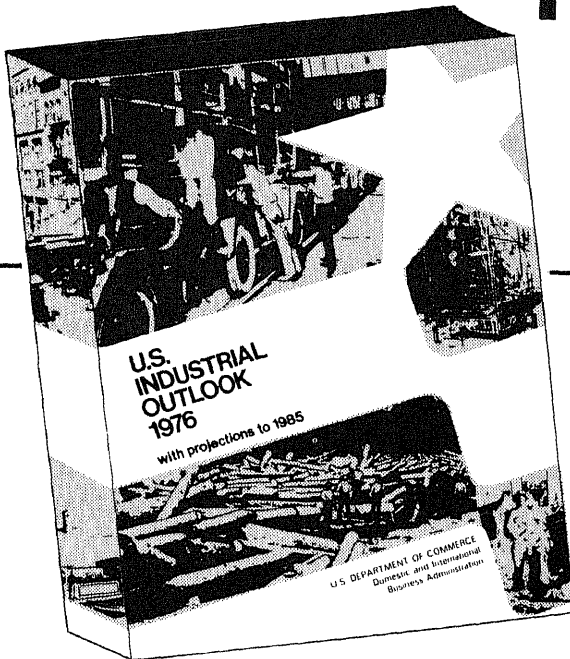
EXPLANATION OF TERMS

Production—Data shown for production represent total quantity of each chemical produced, including

quantity consumed in plants, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

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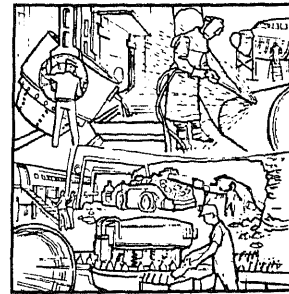
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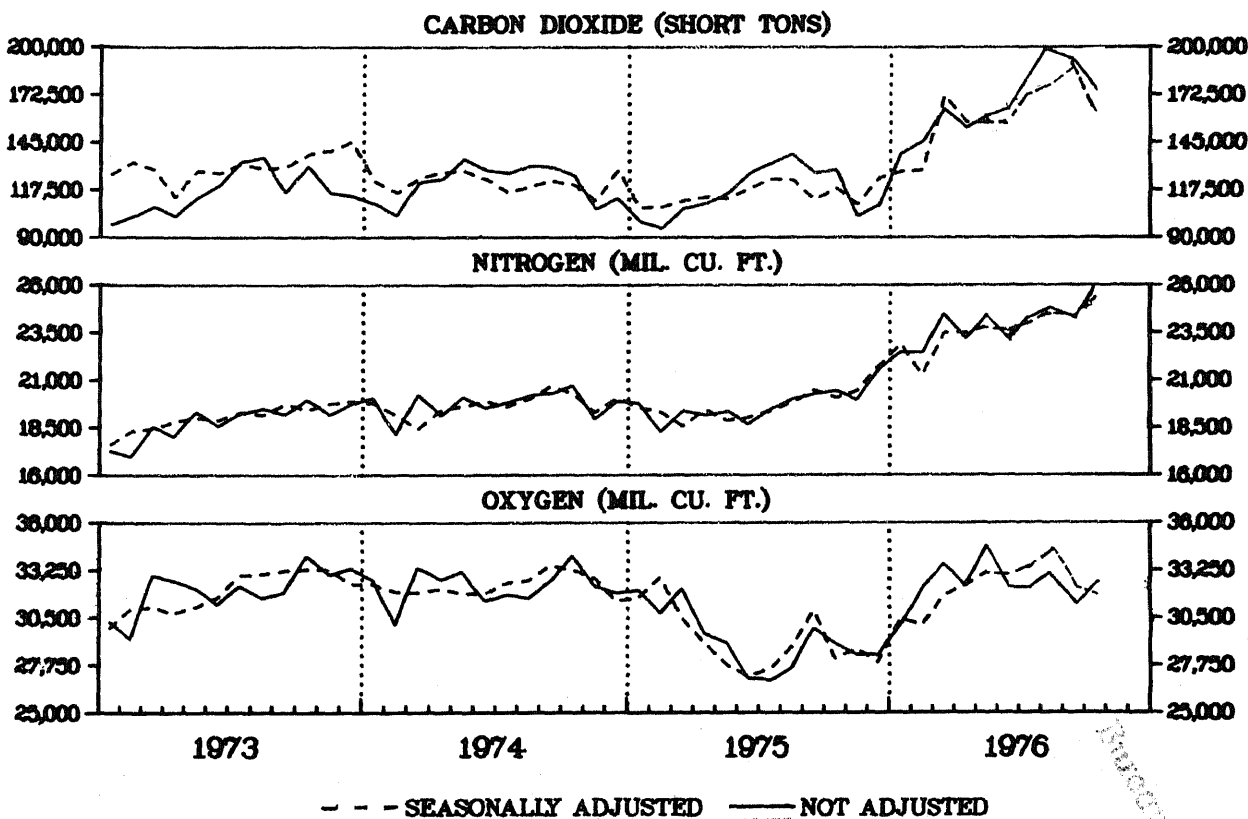
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Issued January 1977

SERIES: M28C(76)-11

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey and the seasonal adjustment program appears on pages 4 and 5.

PRODUCTION OF SELECTED INDUSTRIAL GASES
1973 TO 1976

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233, or call Melva Martin, (301) 763-7838.



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TABLE 1A.--SUMMARY OF PRODUCTION OF PRINCIPAL GASES: 1974 TO 1976

(Seasonally adjusted)

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide (2813311) and (2813311) (Short tons)	Hydrogen, high and low purity (100%) (2813420) (mil. cu. ft.)	Nitrogen, high and low purity (100%) (2813440) (Mil. cu. ft.)	Oxygen, high and low purity (100%) (2813450) (Mil. cu. ft.)
1976					
November.....	536	170,299	7,021	26,294	32,420
October.....	544	160,558	6,612	25,615	31,573
September.....	619	188,282	6,735	24,781	32,096
August.....	658	178,534	6,727	25,216	34,687
July.....	617	174,657	6,277	23,794	33,669
June.....	629	156,840	6,946	23,650	33,074
May.....	615	156,280	6,389	23,826	33,145
April.....	634	156,988	7,101	23,782	33,222
March.....	639	172,021	7,138	23,487	31,761
February.....	607	163,998	6,453	23,719	34,284
January.....	564	148,723	6,365	22,180	29,609
1975					
December.....	630	165,957	7,015	23,244	28,082
November.....	578	146,012	6,285	21,969	28,936
October.....	526	158,133	6,584	21,580	30,225
September.....	633	161,860	6,871	21,986	31,120
August.....	624	164,215	6,810	21,282	28,925
July.....	594	164,625	6,135	20,788	27,722
June.....	557	157,413	5,986	20,355	27,274
May.....	557	149,886	6,171	20,241	25,961
April.....	523	149,434	5,383	20,707	29,183
March.....	458	148,496	5,400	19,814	30,493
February.....	543	137,709	5,311	20,590	32,939
January.....	477	142,630	5,684	20,851	31,722
1974					
December.....	591	155,935	6,335	20,281	31,559
November.....	636	146,110	6,963	20,106	33,040

TABLE 1B.--SUMMARY OF PRODUCTION PRINCIPAL GASES: 1974 TO 1976

(Not seasonally adjusted)

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons) ¹	Carbon dioxide, solid (2813331) (Short tons) ¹	Hydrogen, high and low purity (100%) (2813420) (Mil. cu. ft.) ¹	Nitrogen, high and low purity (100%) (2813440) (Mil. cu. ft.) ¹	Oxygen, high and low purity (100%) (2813450) (Mil. cu. ft.) ¹
1976						
November.....	559	133,697	26,190	6,798	25,664	32,064
October.....	583	144,386	30,726	6,909	26,076	32,584
September.....	626	157,029	34,488	6,626	24,532	31,044
August.....	639	159,424	40,855	6,552	25,342	33,237
July.....	603	150,201	37,390	6,353	23,913	32,898
June.....	622	132,705	35,815	6,835	23,226	32,938
May.....	605	131,485	28,916	6,528	24,421	34,679
April.....	617	127,317	26,338	7,065	23,471	33,213
March.....	601	135,063	29,300	7,337	24,496	33,618
February.....	588	120,316	25,142	6,165	22,448	32,107
January.....	582	114,474	23,467	6,397	22,445	30,024
1975 ²						
December.....	648	116,682	28,096	7,099	23,035	28,530
November.....	603	113,647	23,438	6,085	21,443	28,618
October.....	563	141,687	30,779	6,879	21,968	29,196
September.....	640	138,619	31,441	6,759	21,765	30,061
August.....	606	148,706	35,510	6,633	21,452	27,716
July.....	580	139,701	37,115	6,209	20,892	27,087
June.....	551	135,374	33,762	5,890	19,990	27,162
May.....	548	123,301	30,538	6,306	20,746	29,175
April.....	509	119,472	26,790	5,356	20,436	29,726
March.....	431	115,576	26,309	5,550	20,665	32,276
February.....	526	100,628	21,513	5,074	19,487	30,847
January.....	492	105,978	26,311	5,712	21,101	32,166
1974 ²						
December.....	608	111,345	24,690	6,411	20,099	32,063
November.....	669	114,436	25,804	6,796	19,742	32,611

Note: Beginning in January of 1975, the data are adjusted for report period variation. Comparable data are not available for previous years; however, the effect of this adjustment is considered to be negligible at the total level. See "Reporting Period Adjustment" in the text. ¹See footnote 6, table 2. ²See text--Relationship between M28C and M28C-14 series for Industrial Gases.

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

PRODUCT CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	NOVEMBER 1976 QUANTITY PRODUCED	OCTOBER 1976 QUANTITY PRODUCED	NOVEMBER 1975 QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	559	583	603
	PRODUCED FOR PIPELINE SHIPMENT (EXCLUDING THAT SHIPPED TO BE COMPRESSED)	DO	² 442	² 461	259
	PRODUCED FOR COMPRESSION, INCLUDING CYLINDER AND PIPELINE	DO	117	122	344
	PRODUCED FOR CONSUMPTION IN THIS PLANT.	DO	(²)	(²)	
2813415	ARGON, HIGH PURITY	DO	425	452	373
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	425	452	373
	PRODUCED FOR PIPELINE SHIPMENT.	DO			(NA)
	PRODUCED FOR CONSUMPTION IN THIS PLANT.	DO			(NA)
2813311	CARBON DIOXIDE: LIQUID AND GAS (2)	S.TONS	133,697	144,386	113,647
2813331	SOLID (DRY ICE)	DO	26,190	30,726	23,438
2813420	HYDROGEN, TOTAL (3)	MIL.CU.FT	6,798	6,909	6,085
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	602	881	504
	LIQUID PRODUCED FOR CONVERSION TO GAS	DO			
	PRODUCED FOR PIPELINE SHIPMENT.	DO	1,944	2,005	1,755
	LIQUID PRODUCED FOR GOVERNMENT USE.	DO			
	PRODUCED FOR CONSUMPTION IN THIS PLANT.	DO			
2813440	NITROGEN, TOTAL (4)	DO	25,664	26,076	21,443
	GAS: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	16,400	16,465	12,870
	PRODUCED FOR PIPELINE SHIPMENT	DO			
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO			
	LIQUID: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	6,914	7,259	6,287
	PRODUCED FOR BULK SHIPMENT TO PIPELINES OR TO OTHER AIR SEPARATION PLANTS.	DO			
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO			
2813450	OXYGEN, TOTAL.	DO	32,064	32,584	28,618
	GAS: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	18	15	14
	PRODUCED FOR PIPELINE SHIPMENT	DO	22,048	21,937	19,121
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO	⁶ 4,306	⁶ 4,039	⁶ 4,257
	LIQUID: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	5,217	5,929	4,761
	PRODUCED FOR BULK SHIPMENT TO PIPELINES OR TO OTHER AIR SEPARATION PLANTS.	DO	475	² 664	465
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO	(⁶)	(⁶)	(⁶)

¹Revised by 5 percent or more from previously published figures.

²Excludes quantities of acetylene produced and consumed by railroad shops, shipyards, and small establishments using portable generators.

³Data for (acetylene) produced for consumption in this plant, combined with, produced for pipeline shipment (excluding that shipped to be compressed), to avoid disclosure.

⁴Excludes production of liquid and gas CO₂ converted to and reported as dry ice and also amounts converted from pure CO₂ (liquid or solid) purchased or received from other plants. Also excludes quantities produced and consumed in plants manufacturing soda ash or urea.

⁵Excludes quantities produced and consumed in the manufacture of methanol and ammonia, but includes an unspecified amount of hydrogen produced for sale or interplant transfer to plants consuming this gas in the production of ammonia. Also excludes amounts of hydrogen produced in petroleum refineries for captive use. However, of the total shown for lower purity hydrogen prior to 1969, 70 to 75 percent was accounted for by petroleum refiners with captive hydrogen production. Not all such petroleum refineries were canvassed in this survey.

⁶Excludes amounts produced and used in the manufacture of ammonia and ammonia derivatives.

⁷Data for oxygen (liquid), produced for consumption in this plant, combined with data for oxygen (gas) produced for consumption in this plant to avoid disclosure.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census monthly Form M28A.2, "Industrial Gases - Production," and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such missing figures are imputed from the month-to-month movements shown by reporting firms and are generally limited to a maximum of 25 percent to any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to non-response, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, corrections. Figures which were revised significantly are indicated by footnotes.

REPORTING PERIOD ADJUSTMENT

Beginning January 1975 the data were adjusted for number of working days in the reporting period to compensate for differences in individual company reporting patterns (i.e., calendar month, 4-week, 5-week periods). It has been determined that the calendar month accounting system prevails in the industry. Hence, adjustments have been made to those reporting on other than a calendar month basis.

TRADING-DAY FACTORS

Variation in the rate of activity that arises from the existence of different numbers of trading days in the same month for different years can be an important cause of month-to-month irregular fluctuations. Unlike some other causes of irregular fluctuations such as unexpected economic developments, unusual weather, and statistical errors, trading-day irregularities can be approximately identified and removed so that the underlying trend-cycle stands out more clearly. Hence,

it is often possible to reduce the irregular factor by a trading-day adjustment.

SEASONAL ADJUSTMENT

This report presents seasonally adjusted data for a number of the most important series published monthly in Current Industrial Reports M28A.2, "Industrial Gases." The seasonal adjustment program largely eliminates the effect of normal seasonal variation (including variations due to vacations, weather, etc.) as measured over the time period for which data were used. The resulting information thus provides a better measure than the original data of the month-to-month variations which are due to factors that are not associated with a repetitive seasonal pattern.

RELATED REPORTS

Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Products, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

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RELATIONSHIP BETWEEN M28C AND M28C-14 SERIES FOR INDUSTRIAL GASES

The data as shown in Table 1 reflect levels of production as reported by establishments on monthly from M28A.2. These data are revised in the annual publication collected on form MA-28E.2 and are shown in Table 9 of the annual report M28C-14. The actual data reported by establishments canvassed on the annual differ by varying amounts from those collected monthly due to receipt of revised data from the respondent and establishments reporting on the annual and not on the monthly. For these reasons, the monthly and annual data comprise two separate series and should be used as such for analytical purposes. Specifically, the monthly data should be useful in describing month-to-month changes while the annual

data provide a better indication of the level of production. Revisions to the 1975 monthly series based on findings from the 1974 annual will be forthcoming as soon as research into the differences are resolved.

EXPLANATION OF TERMS

Production--Data shown for production represent total quantity of each chemical produced, including

quantity consumed in plants, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

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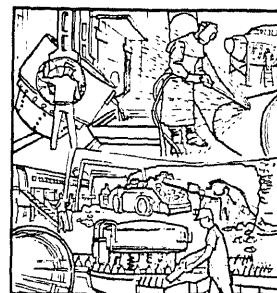
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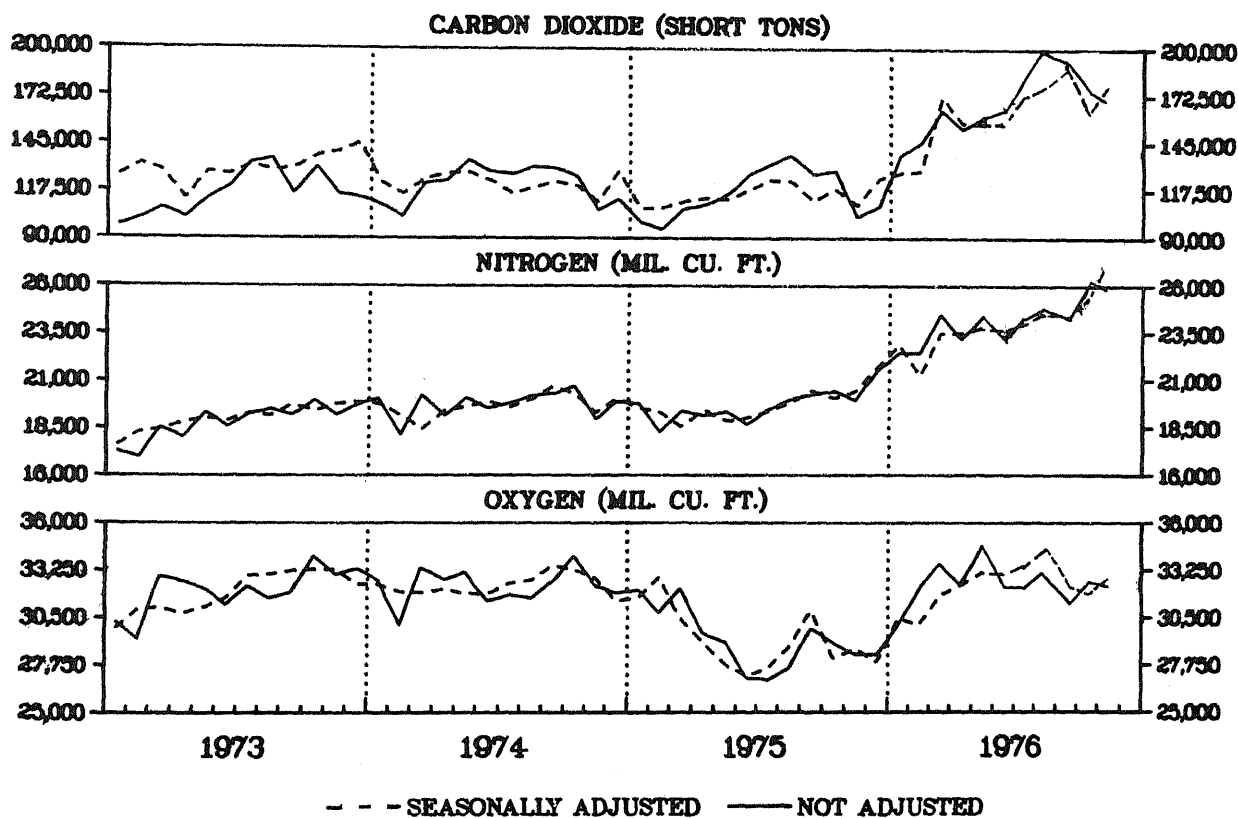


Issued February 1977

SERIES: M28C(76)-12

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PRODUCTION OF SELECTED INDUSTRIAL GASES 1973 TO 1976



Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233, or call Melva Martin, (301) 763-7838.



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TABLE 1A.--SUMMARY OF PRODUCTION OF PRINCIPAL GASES: 1974 TO 1976

Month and year	(Seasonally adjusted)				
	Acetylene (2813200)	Carbon dioxide (2813311) and (2813311)	Hydrogen, high and low purity (100%) (2813420)	Nitrogen, high and low purity (100%) (2813440)	Oxygen, high and low purity (100%) (2813450)
	(Mil. cu. ft.)	(Short tons)	(Mil. cu. ft.)	(Mil. cu. ft.)	(Mil. cu. ft.)
1976					
December.....	523	184,102	6,672	26,617	29,755
November.....	540	178,411	7,069	26,504	32,471
October.....	544	160,558	6,612	25,615	31,573
September.....	619	188,282	6,735	24,781	32,096
August.....	658	178,534	6,727	25,216	34,687
July.....	617	174,657	6,277	23,794	33,669
June.....	629	156,840	6,946	23,650	33,074
May.....	615	156,280	6,389	23,826	33,145
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January.....	477	142,630	5,684	20,851	31,722
1974					
December.....	591	155,935	6,335	20,281	31,559

TABLE 1B.--SUMMARY OF PRODUCTION PRINCIPAL GASES: 1974 TO 1976

Month and year	(Not seasonally adjusted)					
	Acetylene (2813200)	Carbon dioxide, liquid and gas (2813311)	Carbon dioxide, solid (2813331)	Hydrogen, high and low purity (100%) (2813420)	Nitrogen, high and low purity (100%) (2813440)	Oxygen, high and low purity (100%) (2813450)
	(Mil. cu. ft.)	(Short tons) ¹	(Short tons) ¹	(Mil. cu. ft.) ¹	(Mil. cu. ft.) ¹	(Mil. cu. ft.)
1976						
December.....	538	136,756	23,851	6,753	26,378	30,230
November.....	563	139,610	27,893	6,844	25,869	32,144
October.....	583	144,386	30,726	6,909	26,076	32,584
September.....	626	157,029	34,488	6,626	24,532	31,044
August.....	639	159,424	40,855	6,552	25,342	33,237
July.....	603	150,201	37,390	6,353	23,913	32,898
June.....	622	132,705	35,815	6,835	23,226	32,938
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Note: Beginning in January of 1975, the data are adjusted for report period variation. Comparable data are not available for previous years; however, the effect of this adjustment is considered to be negligible at the total level. See "Reporting Period Adjustment" in the text. ¹See footnote 6, table 2. ²See text--Relationship between M28C and M28C-14 series for Industrial Gases.

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

PRODUCT CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	DECEMBER 1976 QUANTITY PRODUCED	NOVEMBER 1976 QUANTITY PRODUCED	DECEMBER 1975 QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	538	563	648
	PRODUCED FOR PIPELINE SHIPMENT (EXCLUDING THAT SHIPPED TO BE COMPRESSED)	DO	² 419	² 445	271
	PRODUCED FOR COMPRESSION, INCLUDING CYLINDER AND PIPELINE	DO	119	118	377
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO	(²)	(²)	
2813415	ARGON, HIGH PURITY	DO	411	430	348
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	411	430	348
	PRODUCED FOR PIPELINE SHIPMENT	DO			
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO			
2813311	CARBON DIOXIDE:				
	LIQUID AND GAS (2)	S.TONS	136,756	139,610	116,682
2813331	SOLID (DRY ICE)	DO	23,851	27,893	28,096
2813420	HYDROGEN, TOTAL (3)	MIL.CU.FT	6,753	6,844	7,099
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	842	601	711
	LIQUID PRODUCED FOR CONVERSION TO GAS	DO			
	PRODUCED FOR PIPELINE SHIPMENT	DO			
	LIQUID PRODUCED FOR GOVERNMENT USE	DO			
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO			
2813440	NITROGEN, TOTAL (4)	DO	26,340	25,785	23,035
	GAS:				
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	16,790	16,477	13,968
	PRODUCED FOR PIPELINE SHIPMENT	DO			
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO			
	LIQUID:				
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	7,055	6,848	6,179
	PRODUCED FOR BULK SHIPMENT TO PIPELINES OR TO OTHER AIR SEPARATION PLANTS	DO	803	782	901
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO			
2813450	OXYGEN, TOTAL	DO	29,108	30,845	28,530
	GAS:				
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	24	18	16
	PRODUCED FOR PIPELINE SHIPMENT	DO	19,422	20,748	19,316
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO	⁶ 4,280	⁶ 4,341	⁶ 4,418
	LIQUID:				
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	4,732	5,098	4,177
	PRODUCED FOR BULK SHIPMENT TO PIPELINES OR TO OTHER AIR SEPARATION PLANTS	DO	650	^r 640	603
	PRODUCED FOR CONSUMPTION IN THIS PLANT	DO	(⁶)	(⁶)	(⁶)

^rRevised by 5 percent or more from previously published figures.

¹Excludes quantities of acetylene produced and consumed by railroad shops, shipyards, and small establishments using portable generators.

²Data for (acetylene) produced for consumption in this plant, combined with, produced for pipeline shipment (excluding that shipped to be compressed), to avoid disclosure.

³Excludes production of liquid and gas CO₂ converted to and reported as dry ice and also amounts converted from pure CO₂ (liquid or solid) purchased or received from other plants. Also excludes quantities produced and consumed in plants manufacturing soda ash or urea.

⁴Excludes quantities produced and consumed in the manufacture of methanol and ammonia, but includes an unspecified amount of hydrogen produced for sale or interplant transfer to plants consuming this gas in the production of ammonia. Also excludes amounts of hydrogen produced in petroleum refineries for captive use. However, of the total shown for lower purity hydrogen prior to 1969, 70 to 75 percent was accounted for by petroleum refiners with captive hydrogen production. Not all such petroleum refineries were canvassed in this survey.

⁵Excludes amounts produced and used in the manufacture of ammonia and ammonia derivatives.

⁶Data for oxygen (liquid), produced for consumption in this plant, combined with data for oxygen (gas) produced for consumption in this plant to avoid disclosure.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census monthly Form M28A.2, "Industrial Gases Production," and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such missing figures are imputed from the month-to-month movements shown by reporting firms and are generally limited to a maximum of 25 percent to any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to non-response, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, corrections. Figures which were revised significantly are indicated by footnotes.

REPORTING PERIOD ADJUSTMENT

Beginning January 1975 the data were adjusted for number of working days in the reporting period to compensate for differences in individual company reporting patterns (i.e., calendar month, 4-week, 5-week periods). It has been determined that the calendar month accounting system prevails in the industry. Hence, adjustments have been made to those reporting on other than a calendar month basis.

TRADING-DAY FACTORS

Variation in the rate of activity that arises from the existence of different numbers of trading days in the same month for different years can be an important cause of month-to-month irregular fluctuations. Unlike some other causes of irregular fluctuations such as unexpected economic developments, unusual weather, and statistical errors, trading-day irregularities can be approximately identified and removed so that the underlying trend-cycle stands out more clearly. Hence,

it is often possible to reduce the irregular factor by a trading-day adjustment.

SEASONAL ADJUSTMENT

This report presents seasonally adjusted data for a number of the most important series published monthly in Current Industrial Reports M28A.2, "Industrial Gases." The seasonal adjustment program largely eliminates the effect of normal seasonal variation (including variations due to vacations, weather, etc.) as measured over the time period for which data were used. The resulting information thus provides a better measure than the original data of the month-to-month variations which are due to factors that are not associated with a repetitive seasonal pattern.

RELATED REPORTS

Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Products, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement.

RELATIONSHIP BETWEEN M28C AND M28C-14 SERIES FOR INDUSTRIAL GASES

The data as shown in Table 1 reflect levels of production as reported by establishments on monthly from M28A.2. These data are revised in the annual publication collected on form MA-28E.2 and are shown in Table 9 of the annual report M28C-14. The actual data reported by establishments canvassed on the annual differ by varying amounts from those collected monthly due to receipt of revised data from the respondent and establishments reporting on the annual and not on the monthly. For these reasons, the monthly and annual data comprise two separate series and should be used as such for analytical purposes. Specifically, the monthly data should be useful in describing month-to-month changes while the annual

data provide a better indication of the level of production. Revisions to the 1975 monthly series based on findings from the 1974 annual will be forthcoming as soon as research into the differences are resolved.

EXPLANATION OF TERMS

Production—Data shown for production represent total quantity of each chemical produced, including

quantity consumed in plants, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

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